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In the first section of this report, the Coordinating Council for Higher Education presents a preliminary response to a legislative resolution which directed the Council to identify and study high cost programs and facilities in public higher education. Concluding that high unit cost is related primarily to small class size, the Council indicates a need for close examination of present and planned academic programs in terms of demand; such scrutiny would ensure the effective utilization of funds available to higher education. The second section of the report presents results of the Council staff's first annual comprehensive review of current educational programs of 2 segments of higher education --the California State Colleges and the University of California. Some of the observations in this section point to several questions for which the Council and educational segments may wish to seek answers in the near future. In the summary and conclusions, a review by the Council of existing and new programs is considered. The Council hopes to play a greater role in assuring that the academic plans of California's higher education systems are complementary in their mutual goal of meeting the higher education needs of the state. (WM)

ED 032835

COORDINATING
CALIFORNIA'S
HIGHER
EDUCATION

SURVEY OF EDUCATIONAL OFFERINGS AND ACADEMIC PLANS WITH A CONSIDERATION OF HIGHER COST PROGRAMS: A FIRST REPORT

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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COORDINATING
COUNCIL for
HIGHER
EDUCATION

69–7
JULY 1969

FOREWORD

The Survey of Educational Offerings and Academic Plans with a Consideration of Higher Cost Programs: A First Report was submitted to the Coordinating Council for Higher Education for its consideration in May 1969. In July 1969, the Council acted by resolution to transmit the Survey to the California State Legislature and to implement five recommendations related to the educational program survey and the Council's role in academic planning. These resolutions and recommendations are attached directly below.

#320

COORDINATING COUNCIL FOR HIGHER EDUCATION

Resolution Transmitting to the Legislature the Survey of Educational Offerings and Academic Plans

WHEREAS, House Resolution No. 376, 1968 Session, in part calls for the following:

> RESOLVED, That the Coordinating Council for Higher Education, with the cooperation of the Regents of the University of California, the Trustees of the California State Colleges, and the Board of Governors of the California Community Colleges, is hereby directed to undertake a study of other such highly expensive, specialized, limited-use academic programs and facilities, with the exception of programs in medicine and dentistry, with the objective of concentrating such programs and facilities at strategic locations in these state educational systems and thereby effecting a reduction in total state expense therefor, and to provide a preliminary report of its findings and recommendations to the Legislature and to the Governor not later than the fifth legislative day of the 1970 Regular Session, and to submit a final report not later than the fifth legislative day of the 1971 Regular Session;

now, therefore, be it

RESOLVED, That the Council authorizes its Director to transmit the Staff Report 69-7 entitled, Survey of Educational Offerings and Academic Plans With a Consideration of Higher Cost Programs: A First Report, to the Legislature as an initial response to HR 376 the Council's intention being to transmit future reports in this series, at least until such time as comprehensive unit cost data are available to enable determination of costs and benefits of limited-use programs.

Adopted
July 15, 1969

#321

COORDINATING COUNCIL
FOR HIGHER EDUCATION

Resolution on Survey
of Educational Offerings and Academic Plans

WHEREAS, The Council has reviewed the staff report on Survey of Educational Offerings and Academic Plans (Report No. 69-7), and

WHEREAS, The Council is charged by the Donahoe Higher Education Act to develop plans for the orderly growth of public higher education and the making of recommendations on the need for, and location of, new facilities and programs, now, therefore, be it

RESOLVED, That the Council directs the Director to implement the five recommendations (in Attachment A) relating to the educational program survey and the Council's role in academic planning to the extent that this can be done within the budget for 1969-70.

Adopted
July 15, 1969

ATTACHMENT A

Recommendations on the Educational Program Survey and the Council's Role in Academic Planning

1. The Council Director after examining the staff work load and availability of consultant assistance and funds shall review the following subject areas for which comprehensive inter-segmental study is indicated and for which a Council-sponsored study is appropriate and determine a priority for each examination:

   Conservation of Natural Resources
   Agriculture
   Law Enforcement and Corrections
   Graduate Foreign Languages
   Area Studies (including Ethnic Studies)
   Legal Education

   These examinations should include the role of the Junior Colleges and the impact on private institutions of higher education in California as appropriate. The Director shall report on the schedule of the proposed Council-sponsored studies at an early date.

2. The Council requests the Director to designate Council staff to confer with representatives of the University of California about the priority and design of studies to be conducted by the University as suggested in Staff Report 69-7 and to report the results of such discussions to the Council no later than November 1, 1969. The subject areas are as follows:

   Dramatic Arts
   Graduate Anthropology
   Graduate Physics
   Graduate Programs in Administration
   Development of U.C.-Riverside
   New Programs at U.C.-San Francisco
   Library Science at U.C.-Santa Barbara and San Diego

3. The Council requests the Director to designate Council staff to confer with representatives of the California State Colleges about the priority and design of studies to be conducted by the State Colleges as suggested in Staff Report 69-7 and to report the results of such discussions to the Council no later than November 1, 1969. The subject areas are as follows:

   Home Economics
   Dramatic Arts
   Graduate Anthropology
   Graduate Geology
   Graduate Physics
   Radio and T.V.
   Art and Music (MM and MFA degrees)
   Religious Studies

4. Effective planning and coordination of academic programs cannot take place after the fact. In order for the Council to responsibly discharge its duties under the Donahoe Higher Education Act "to develop plans for the orderly growth of higher education and the making of recommendations on the need for and location of new facilities and programs", the Council needs to be more intimately involved in early stages of academic program development. The Council requests the Director and Council staff, in cooperation with representatives from the University, the State Colleges and the Junior Colleges to formulate a plan for review of new programs which will provide for both the orderly growth of higher education and involve the Council as early as possible, such plan to be reported to the Council at an early date.

5. The Council requests the Director to continue the educational program survey and review of academic plans, to make improvements in method used, and to expand the kinds of data used. The Director shall determine the timing for reports of future reviews.

PREFACE

The following pages present in one document two reports on interrelated matters. The first section considers the charge of a legislative resolution asking the Council to identify and study high cost programs in public higher education. It reviews available data and what information may be available to higher education planners and administrators in the future. The second section of the report presents the results of the first comprehensive educational program survey conducted by the Council staff.

Since the orderly growth and establishment of new programs has cost implications and in view of the considerations concerning class size and size of program raised in the discussion of Section I, these two reports have been placed in juxtaposition.

In considering the results of the educational program survey and the role of the Council in academic planning and program review, it should be kept in mind that the objective of any program and academic plan review by a coordinating body should be a positive, constructive one designed to improve higher education in California. The coordinating agency must seek actively to develop a planning role rather than a role of policeman. Where questions are raised about present situations, it is not to criticize decisions and actions of the past but rather to identify matters in academic planning which will benefit from concerted attention through study either of an inter-segmental or intra-segmental nature. Such attention will serve the interest of higher education and the general public. It is in this spirit that this report should be read and considered.

The Staff Report was prepared by Russell Riese (Section I) and John M. Smart (Section II) with the cooperation of J. C. Scheuerman.

Owen Albert Knorr
Director

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INTRODUCTION

The following report seeks to meet three objectives, or assignments, all relating to academic course offerings in the University of California and the California State Colleges. They are: (1) a preliminary response to House Resolution 376 (1968) which directs the Council's attention to high cost academic programs and facilities, (2) a report of results of the first annual survey of educational offerings called for by the Council in May 1968, and (3) comment upon the recently revised academic plans of the University and State Colleges, continuing a series of reports to the Council begun in 1966.

On several occasions, actions of the Council and actions of the Legislature have been closely related. Such is the case when one examines the Council's determination to conduct an educational survey and the Legislature's action (HR 376) which directs the Council to undertake a study of academic programs and facilities.

The background leading up to the Council's action concerning the program survey is presented below, followed by a description of the Legislative resolution.

Council Actions

In 1967 the Council completed a review of procedures in respect to one of its three primary functions--that of commenting upon the level of state support sought for higher education. This performance review led the Council to discuss its performance under the two other major functional assignments stated in the Donahoe Higher Education Act. These assignments relate to (1) maintenance of functional differentiations among the three public segments of higher education and (2) planning for the orderly growth of higher education.

As required by statute the Council has reported to the Legislature on the need for changes in the differentiation of functions and in so doing has as of yet found no evidence for change; however, no major examination of the questions relating to functional delineation has been made since the Master Plan.

The Donahoe Act's statement in respect to the third function calls for "development of plans for the orderly growth" of public higher education. Although planning for additional centers has been conducted by the Council, "academic plans" for orderly growth have not been prepared by the Council. However, many of its special studies concerning specific subject areas fulfill in some respect the planning intent of the legislation. These studies have included examination of continuing education, library needs, programs in the health sciences and a study of engineering education. Other authorized projects concern the need for marine science programs and for programs in environmental design.

Implementation of the two functions; delineation of function and planning for orderly growth did not appear to the Council, and others, to be satisfactory. Evidence of this feeling was reflected to some degree by the Governor's Survey on Efficiency and Cost Control's task force when it commented on the Council as follows:

> [The Council] . . . has failed to provide the direction and coordination which the Legislature sought. Its studies and recommendations are merely attacks upon single issues as they arise. There is no concerted, organized approach toward overall coordination to promote effective utilization of resources.

The task force report not only noted a duplication of facilities but also proliferation of curricula.

At the March 18, 1968, meeting of the Council considerable discussion was devoted to the Council's role in delineation of function and planning for orderly growth. Specifically, the Council discussed the following points:

1. While the Council now receives on an annual basis the academic plans of the University of California and the California State Colleges, should ways and means be explored for the Council to take a more active role in the development of those plans and their review? Should the Council officially "approve" plans or elements of them and support their implementation? Should the Council prepare "plans" articulating the goals and objectives of the two four-year segments, as well as relating them to those of individual Junior Colleges perhaps on an area basis.

2. To date the Council has played a limited role in approving new University and State College programs--review is limited to a restricted list of proposals and has been of a general nature. Though the question has been raised on several occasions before, and was the subject of a review this last fall, should the matter be re-reviewed?

   Should more staff time and effort be devoted to intensive review of new programs? Should the kinds of proposals to be considered by the Council be expanded?

   (In this connection it is noted that 13 coordinating board agencies [of 21] across the country have authority for approval of most new programs.[1] This listing includes states such as Illinois, Minnesota, Ohio, Oklahoma, Texas, Virginia, and Wisconsin.)

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[1] The 15 consolidated governing boards having coordination responsibilities have this responsibility as well as do the 3 state boards of education charged with overseeing higher education in their states (New York, Pennsylvania and Michigan).

3. Staff and consultants' studies have been prepared in the past concerning individual subject areas as medical education, continuing education and the like. Should such individual studies be continued and expanded (currently one such study is being completed and two begun)? In this connection should expanded use of consultants be made with possible corresponding reduction of Council staff or their reassignment of function? Should greater use of committee-prepared studies be made.

   (Other states have used devices such as use of a panel of experts retained on a permanent basis generally from other states to give advice on a range of subjects--need for new programs, value of segmental proposals, etc.[1] Special committees rather than single consultants may prepare studies. For example, North Carolina engaged a committee of out-of-state educators to review the need for university status for one of its state colleges. The committee made its report to the board, and the board staff made separate comment.)

4. The responsibility for budget review might be considered primary and given increased emphasis. Should the Council seek to divest itself of stated functions relating to the planning for the orderly growth of higher education and instead seek an expanded budget review and recommendation role? (Presumably delineation of function could be held to a policing function requiring major effort only on occasion. Periodic review and recommendation on the need for new centers and administration of federal programs could continue.) Support for this position may be found if it is accepted that the institutions and segments properly are the best, and only, non-legislative-executive judge of academic needs and changes which should be made to meet those needs. (Conversely the Council may emphasize the planning function and further deemphasize its consideration of budgets.)[2]

Several factors indicated the desirability of the Council conducting a survey of educational offerings of the three segments of public higher education. They were:

1. The Council is charged with development of plans for orderly growth. An initial element in any planning effort is to survey that which is currently available and the extent to which it is utilized. Annual comprehensive surveys will enable studies of specific subject matter areas to be more complete as well as identifying areas where such studies are needed.

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[1] A similar approach is being used by the President of the University in respect to plans for schools of administration.

[2] From Minutes of the March 18, 1968, Council meeting. See Appendix D for full text.

2. The Council should be assured of the prudent use of public funds. Apparently unnecessary duplicatory offerings, unless explained by age of institution or other special circumstances, do not appear to be a prudent use of higher education resources and facilities.

3. A more complete knowledge of the current pattern of offerings and their level of activity will enable a better review of academic plans and new programs than has heretofore been the case. The general level and sophistication of planning and continued review of on-going activities should be the result.

Discussion relative to the Council's role and performance in view of its charge to develop plans for the orderly growth of public higher education continued through a period of several months. These discussions resulted in the Council approving on May 20, 1968, in principle, a preliminary plan for an annual survey of education offerings of the California State Colleges and the University of California.[1] The Junior Colleges were excluded from the proposal because of lack of a data collection and processing system. Several Council members favored greater involvement of the Junior Colleges.

Legislative Actions

HR 376[2] (Lanterman) directs the Council to undertake a study of highly expensive, specialized, limited-use academic programs and facilities, with the objective of concentrating such programs and facilities at strategic locations in the public segments of higher education in California and thereby effecting a reduction in total state expense. The resolution calls specific attention to the difficulty the State of California is experiencing in finding sources of funding for its various construction programs and cites facilities proposed for construction which duplicate existing facilities at other locations. In particular, proposed construction in the instructional areas of engineering and the performing and creative arts are cited. Because the Council is charged under the Donahoe Higher Education Act with development of plans for the orderly growth of public higher education and the making of recommendations on the need for and location of new facilities and programs, it is appropriate and proper for the Council to reexamine its charge and its performance under this charge.

Organization of the Report

The material included in Section I is directed primarily to the question of identification of the higher cost program. Data are considered from the only existing comprehensive inter-segmental cost surveys: the

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[1] The proposal for an educational survey which was approved in principle is shown in Appendix E.

[2] The full text of HR376 is presented in Appendix A.

California Cost and Statistical Study (1963-65) sponsored by the Council and the earlier California and Western Conference Study (1957). In brief, the section concludes that high unit cost is related primarily to small class size. This finding suggests that close examination of present and planned academic programs in terms of demand is necessary to assure effective and efficient use of funds available to higher education, though it is recognized that a program, even with small enrollment, need not necessarily imply small classes. The method of teaching and curricula organization may overcome small class and higher cost tendencies.

Section II presents the results of the Council staff's first effort at a comprehensive review of present programs in the two public four-year segments in conjunction with planned programs as presented in the most recent academic plans prepared by the California State Colleges and the University of California. As is noted in the section, wholly comparable data among numbers of degrees granted, number of student majors and student credit hours produced--as well as the program labels themselves--are not now available. Indeed there will likely be continued difficulties in developing fully comparable information so long as there is flexibility of curriculum and options accorded to the student. However, recognizing these difficulties, it is possible to identify program areas which appear, on the basis of the several measures, to be particularly susceptible to close scrutiny by the two systems as well as possibly by the Council. Results of such examinations may then be included in future academic plan revisions.

Programs of the California Community Colleges are not included in this present review--though some financial data concerning them is presented in the discussion in Section I. Data is not now collected by this segment of public higher education in a form usable for an educational program survey of this nature. Further, comprehensive individual district academic plans are only now being developed. In later reviews greater attention may be directed to the Junior Colleges as data systems improve and as specific areas for cooperative planning are identified by the colleges themselves and by the Board of Governors. It should be pointed out, however, that the Junior Colleges are much less able, because of limited resources and experience, than the State Colleges or University to move quickly toward development of sophisticated information systems.

Section II includes, in addition to the program survey, specific comments concerning the two academic plans. Certain of these observations, together with the program survey, point up a number of subjects and questions to which the Council and the segments of higher education may wish to address themselves in the months to come.

The report's summary and conclusion considers the question of Council review of new and existing programs, toward establishing the need for a greater role for the Council in assuring that the academic plans of the three systems of public higher education are complementary in their mutual goal of meeting the needs of California higher education efficiently and effectively.

SECTION I

HIGH COST PROGRAMS - HR 376

With increasing demands for funds to support higher education it is quite appropriate that high cost academic programs be examined closely. The public, in the case of tax-supported institutions, must be assured that funds are being spent for programs for which there is bona fide need and that the funds are being employed efficiently and effectively.

The problem to which this initial review is devoted is one of exploring the characteristics of the higher cost subject areas in California public higher education. This review must be conducted if response is to be made to House Resolution 376.

In the following pages three aspects of subject area costs are considered: capital outlay, teaching costs and support costs. These cost elements are considered in light of available data with conclusions being reached concerning their relative importance in identifying "high cost programs" and the data which are required before a complete cost study can be undertaken by the Council and the segments.

Capital Outlay

Two decades of continuing increases in enrollments in public higher education in California have brought about unprecedented need for new facilities. At an early date, the segments and governmental agencies recognized the need to reconcile the space required for a particular program with the expected student load, as well as a need to provide insurance that physical facilities were being utilized efficiently. As a result, California has been a pioneer among the states in the areas of utilization standards and capital outlay planning.

The Restudy[1] space and utilization standards, developed in 1955, have been used extensively throughout the State and in other parts of the United States as well. The Restudy standards applied to the University and the State Colleges only; however, the Junior Colleges adopted portions of the standards. One of the recommendations of the 1960 Master Plan called for the coordinating agency to conduct a utilization study of the facilities of all three public segments of higher education with the intent of modifying existing standards, if appropriate. The results of this study were contained in the report, Space and Utilization Standards, California Public Higher Education which was adopted by the Council in September, 1966. The space standards presented in the report included:

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[1] T. R. McConnell, T. C. Holy, and H. H. Semans, A Restudy of the Needs of California in Higher Education, California State Department of Education, Sacramento, 1955.

1. Standards for classrooms and seminar rooms.
2. Standards for laboratories categorized into upper and graduate division, lower division and subject field area.
3. Office standards based on space per full-time instructional staff member.
4. Library facilities standards for Junior Colleges.[1]

The resultant standards are used as a rule-of-thumb wherein architects and planners estimate total space needs on the basis of the expected student load by instructional area. The Department of Finance and the Office of the Legislative Analyst apply these standards to proposed new construction. The space standards take into account three components--(1) hours per week rooms are expected to be used, (2) percent of station occupancy when rooms are occupied, and (3) the space per station for each subject field classification. These three components interact with each other to give the allowable space per student-station. The equation for this interaction is as follows:

Assignable square feet per station:

$$\frac{\text{room use} \times \text{station occupancy}}{} = \text{assignable square feet per weekly student contact hour}$$

The detailed standards are shown in Table I-1.

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[1] The study did not include an analysis of the specialized space needs for (1) research laboratories, (2) music facilities, and (3) physical education facilities.

TABLE I-1

Assignable Square Feet per Station and per 100 Weekly Student Contact Hours, 8–5, California Public Segments of Higher Education

LABORATORIES

Subject field area	ASF/ stn.	ASF/100 WSCH* ASF/stn. ÷ Hrs. wk. × stn. occ. × 100
Life sciences		
Agriculture		
Lower division....	60	280
Upper division....	60	375
Biological sciences		
Lower division....	55	260
Upper division....	60	375
MPE sciences		
Physical sciences		
Lower division....	60	280
Upper division....	70	440
Mathematical sciences		
Lower division....	30	140
Upper division....	30	190
Engineering sciences		
Lower division....	90	425
Upper division....	110	690
Social sciences		
Psychology		
Lower division....	40	190
Upper division....	60	375
All other social sciences		
Lower division....	30	140
Upper division....	30	190
Humanities		
Art		
Lower division....	65	305
Upper division....	65	405
Other humanities		
Lower division....	40	190
Upper division....	40	250
Professions (U.C. & C.S.C.)		
Business administrations		
Lower division....	30	140
Upper division....	30	190
Education		
Lower division....	--	---
Upper division....	40	250
Home economics		
Lower division....	60	280
Upper division....	60	375
Journalism		
Lower division....	60	280
Upper division....	60	375
Health sciences		
Lower division....	--	---
Upper division....	50	315
Junior college classifications		
Agriculture........	150	705
Business..........	30	140
Home economics...	60	280
Applied graphic arts	80	375
Health services....	50	235
Public personnel service..........	50	235
Aero. technology...	175	820
Air conditioning...	130	610
Building trades....	175	820
Ceramic technology	40	190
Chem. technology..	70	330
Drafting technology	60	280
Electrical technology......	70	330
Electromechanical..	100	470
Electronic technology......	60	280
Engin. Gen........	90	425
Engineering technology......	70	330
Industrial technology......	75	350
Mechanical—Auto.	200	940
Metallurgical technology......	65	305
Metal trades......	130	610
Textile technology.	120	565
Welding..........	90	425
Other trade technology......	75	352

Assignable Square Feet per Station and per 100 Weekly Student Contact Hours, 8–5, California Public Segments of Higher Education

CLASSROOMS AND SEMINARS

ASF/stn. = .15 sq. ft.
ASF/100 WSCH = 67 sq. ft.

Utilization components for space standards computation

	Hrs./wk.		Stn. occ. %		Stn. use
Classrooms and seminars...	34	×	.66	=	22.4
Laboratories:					
Lower division..........	25	×	.85	=	21.3
Upper division..........	20	×	.80	=	16.0

Abbreviations

ASF/stn. = Assignable square feet per student station.
Hrs/wk. = Number of hours out of a 45-hour week, 8 a.m. to 5 p.m. a classroom, or laboratory, on the average, should be used.
Stn. occ. = The percent of expected student station occupancy when rooms are in use.
Stn. use = The number of hours per week (out of the 45-hour week) which a student station, on the average, should be used.
WSCH = Weekly student contact hour.

Formula for deriving the standards

$$\frac{\text{ASF/stn.}}{\text{Hrs./wk.} \times \text{stn. occ.}} \times 100 = \text{ASF/100 WSCH}$$

Example A. For determining ASF/WSCH in classrooms and seminars.

$$\begin{array}{l} \text{ASF/stn.} = 15 \\ \text{Hrs./wk.} = 34 \\ \text{Stn./occ.} = .66 \end{array} \quad \frac{15}{34 \times .66} \times 100 = 67 \text{ ASF/100 WSCH}$$

Example B. For determining ASF/WSCH in lower division biological science laboratory.

$$\begin{array}{l} \text{ASF/stn.} = 55 \\ \text{Hrs./wk.} = 25 \\ \text{Stn./occ.} = .85 \end{array} \quad \frac{55}{25 \times .85} \times 100 = 260 \text{ ASF/100 WSCH}$$

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* NOTE: This table supersedes Table 2 found in CCHE document 66-11 dated May 24, 1966.

In order to consider the question of costs of facilities by subject area, information first developed by the Los Angeles Junior College District may be usefully examined. From these data Table I-2 displays, in decending order, initial facility construction costs per student-credit-hour by subject field. The estimated costs were based on the space and utilization standards adopted by the Council and have been expressed in 1968 constant dollars, assuming a 40-year life for the facilities. The costs take into account usual building efficiency factors, all fees and initial complements of equipment. The estimates are based upon construction costs for the Los Angeles area; however, they are indicative of construction costs throughout California. (Appendix B contains additional explanation and tabular data used in developing these estimates.)

TABLE I-2

Typical Facility Construction Cost Per Student-Credit-Hour--Lower Division
(Amortized over a period of 40-years with full utilization)

1968 Constant Dollars

Subject Area	Initial cost per student credit hour arranged in descending order
*Drama	$18.80
Auto Tech.	11.10
*P.E. - Men	9.50
Air & Space	9.19
*P.E. - Men & Women	8.17
*Physics	7.17
*Chemistry	6.85
*P.E. - Women	6.50
*Art	4.86
*Music	4.60
*Nursing	4.58
Cosmetology	4.22
*Eng. & Elec.	3.99
*Life Science	3.71
*Home Economics	3.33
*Earth Science	2.94
*Journalism	2.86
*For. Language	2.62
*Business	2.56
*Speech	2.14
*Psych. & Philos.	2.10
*Mathematics	1.66
*Social Science	1.43
*English	1.41

Note: These costs per student-credit-hour were derived under the assumption that each facility is utilized at the level specified by the Space and Utilization Standards. Any variation from the standards will be reflected in different facility costs/SCH.

For these Junior College classifications it can readily be observed that the highest facility cost per student credit hour is associated with drama which is followed by automotive technology, physical education-men, air and space technology, physical education-women, and physics.

The subject field areas marked with an asterisk are also offered by the University and the State Colleges. Those without asterisks are in technical areas (for the training of technicians) which are offered in the Junior Colleges only. One would anticipate the same results from a cost analysis for facilities used for lower division study in the University and State Colleges, because the same space allocations apply to lower division instruction in each subject area in all public segments. Costs for upper division and graduate programs would be higher on a per student station basis because allowances of square feet per laboratory student station are greater. It should be noted that space required for research laboratories, specialized music facilities, and outdoor physical education facilities are not included in the above tables.

Instructional Costs

California and Western Conference Cost Study. Concern over increasing enrollments in higher education, rising costs of construction and operation of colleges and universities and technological advances led to one of the first major unit cost studies in higher education; the California and Western Conference Cost and Statistical Study. In 1954, with the aid of a grant from the Fund for the Advancement of Education, a group of institutions began work. The participating institutions were: the University of California, Indiana University, The State University of Iowa, Michigan State University, the University of Minnesota, Purdue University, Pennsylvania State University, the University of Washington, Vanderbilt University and Wabash College. The study was directed toward the economics of increasing enrollments, faculty salaries, the impact of more specialized instruction, the expansion of graduate instruction, the growth of the research function, physical plant requirements, and possibilities of cost reduction.

While the entire collegiate instructional program of each participating institution was included in the study, the report presented analyses of costs and factors affecting costs for a limited list of subject fields. (Appendix C, shows the quartile distribution of one semester's teaching-salary expenditures per student-credit-hour by levels of instruction and by subject fields.)

The study disclosed median costs, for 1954-55, for each level of instruction by subject field. The results are arranged in descending order in Table I-3.

TABLE I-3

Total One-Semester Teaching-Salary Expenditures per Student-Credit-Hour by Subject Field and Level of Instruction, 1954-55

	Subject Area	Teaching Salary Expenditure per SCH
Lower Division	Mechanical Engineering	$14.75
	Engineering Drawing	14.29
	All Engineering	12.09
	Dramatic Arts	8.84
	Germanic Languages	8.40
	Art	7.84
	English	7.73
	Education	7.67
	French	7.52
	Chemistry	7.10
	Physics	6.66
	Mathematics	5.65
	Biological Sciences	5.46
	Philosophy	5.18
	Business	5.06
	Economics	4.92
	Political Science	4.43
	History	4.23
	Sociology	4.13
	Psychology	3.21
Upper Division	Germanic Languages	$40.92
	French	26.88
	Physics	21.77
	Engineering Drawing	18.39
	Dramatic Arts	16.28
	Mechanical Engineering	15.67
	All Engineering	15.45
	Biological Sciences	14.52
	Chemistry	14.36
	Art	12.56
	Mathematics	12.31
	Philosophy	11.38
	English	11.14
	History	10.25
	Political Science	9.51
	Education	9.19
	Sociology	9.11
	Economics	8.35
	Psychology	7.89
	Business	6.21
Graduate Division	Political Science	$50.17
	All Engineering	44.67
	Mechanical Engineering	44.36
	Economics	40.88
	History	38.60
	French	38.30
	Philosophy	33.98
	Dramatic Arts	33.80
	Art	32.59
	Sociology	31.61
	Mathematics	30.04
	Business	29.83
	Biological Sciences	29.37
	Physics	29.08
	English	28.82
	Germanic Languages	26.67
	Chemistry	25.14
	Psychology	24.90
	Education	17.52
	Law	10.88

SOURCE: California and Western Conference Cost and Statistical Study

For this group of institutions and at the given point in time, it is interesting to note the two highest median cost subject areas for each level of instruction: lower division--Mechanical engineering, engineering drawing; upper division--germanic languages, french; graduate--political science, engineering. The study concluded:[1]

(1) Significant variations in unit costs existed among institutions within subject fields.
(2) High or low unit costs were not intrinsic to specific subject fields, but were the result of a combination of factors which affect costs of organized classes.
(3) In every institution having graduate instruction, the unit costs of such instruction were significantly above those of upper-level instruction, which, in turn, were higher than the costs of lower-level instruction.

California Public Higher Education Cost Analysis

In 1963, the Council conducted a study of instructional costs, by subject area classifications, in California public higher education. Comparative summary tables which tabulated teaching and support costs and instruction costs by subject area, by campus and segmental totals, were published in June, 1965.[2] The same data served as a basis for the Council's report on instructional practices which was published in 1967.[3]

The 1963 study represents the only study of teaching and instructional costs for all three public segments of higher education in California; consequently, it represents the sole source as well as the most recent source of information on this topic.

Generally, the average cost of graduate instruction is greater than that of upper-division instruction which in turn is greater than average cost of lower-division instruction. Further, it is generally assumed that lower division instruction can be accomplished at lowest cost in the Junior Colleges, the State Colleges have higher costs and the University costs are the highest. These generalizations were verified by the data from the Cost Analysis. Table I-4 compares average teaching and support costs and instructional costs by level of instruction for the three public segments of higher education in California for the 1963-64 academic year.

Although these average cost generalizations appear to be true, for entire segments, wide variations in unit costs occur when individual campus costs are examined.

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[1] Ibid. p. 14

[2] California Public Higher Education Cost and Statistical Analysis, CCHE, Fall 1963 (Summary published June 1965).

[3] Instructional Practices and Related Faculty Staffing In California Public Higher Education, CCHE, October 31, 1967. 67-15

TABLE 1-4

Unit Costs of Instruction for Public Higher Education in California, 1963-64

	Academic Year			
	Teaching and Support Expense[2]		Instructional Expenditures[3]	
	Per S.C.H. (1)	Per Annual F.T.E.[1] (2)	Per S.C.H. (3)	Per Annual F.T.E.[1] (4)
Lower Division				
U.C.	$15.28	$458	$23.63	$709
C.S.C.	13.66	410	19.27	578
J.C.	12.15	364	14.69	441
Upper Division				
U.C.	$24.79	$744	$45.16	$1355
C.S.C.	18.45	553	26.03	781
Undergraduate				
U.C.	$19.33	$580	$32.81	$984
C.S.C.	15.90	478	22.44	674
J.C.	12.15	364	14.69	441
Graduate				
U.C.	$71.94	$1295	$127.47	$2295
C.S.C.	32.41	778	45.74	1098
Total				
U.C.	$25.99	$719	$44.79	$1239
C.S.C.	16.62	493	23.46	696
J.C.	12.15	364	14.69	441

[1] Graduate student credit hours are divided by 9 for UC and by 12 for the CSC as representing a full-time load. Undergraduate student credit hours are divided by 15 for all segments.

[2] Includes the direct teaching time portion of the faculty member's salary and related supplies, equipment, and nonacademic instructional personnel.

[3] Besides Teaching and Support Expense, includes Departmental Research at the University and time of teaching faculty (and related expenses for supplies, equipment and nonacademic instructional personnel: devoted to Departmental Administration, Institutional Administration, Public and Professional Services, Student Activities and Counseling at all three segments--Fall Semester, 1963.

SOURCE: California Public Higher Education Cost and Statistical Analysis, CCHE, Fall 1963 (Summary published June 1965).

The 1963 data were examined to determine the highest unit teaching cost[1] subject areas and the lowest unit teaching cost subject area within individual campuses. Table I-5 indicates the range of unit teaching costs. The figures given are the teaching cost per student credit hour in one subject area at one institution, not necessarily the same subject area or campus in each case.

TABLE I-5

Range of Unit Teaching Costs Per Student-Credit-Hour (1963-64)

	Lower Division		Upper Division		Graduate	
	Highest	Lowest	Highest	Lowest	Highest	Lowest
U.C.	$ 35.10	$1.35	$267.33	$4.61	$477.33	$ 8.88
C.S.C.	163.50	1.71	184.67	4.84	330.00	10.23
J.C.	356.00	0.68				

Table I-6 lists, in rank order, the fifteen lower-division subject areas with highest unit teaching costs on individual segmental campuses.

The analysis shows that the highest unit teaching cost for one specific subject area offered by one Junior College (library science), in 1963, was more than ten times the highest lower-division unit teaching cost on a University campus (Scandinavian languages). One State College offered a lower-division program (journalism) which had a unit teaching cost exceeding that of the highest lower-division unit teaching cost (Scandinavian languages) at the University by a factor of 465%.

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[1] The teaching costs presented in the tables that follow are limited to the direct teaching time portion of the faculty member's salary--i.e., these costs exclude faculty time devoted to departmental research, academic administration, public and professional services, student services, instructional supplies and equipment, and nonacademic instructional personnel.

TABLE I-6

Lower Division Unit Teaching Costs for Fifteen Highest Cost Subject Areas*

1963-64

JUNIOR COLLEGES	Lowest Mean Class Size	Highest Unit Cost	STATE COLLEGES	Lowest Mean Class Size	Highest Unit Cost	UNIVERSITY	Lowest Mean Class Size	Highest Unit Cost
Library Sci.	1	$356.00	Journalism	1	$163.50	Scandinavian	9	$35.10
Voc. Nursing	10	282.67	Physics	3	59.55	Drama	16.7	35.05
Reg. Nursing	9	170.45	Chemistry	3	52.22	P.E.	16.5	32.48
Air Condition.	4	110.87	P.E. and Rec.	11	44.49	Land Arch.	11.5	28.07
Engin. General	6	102.78	Music	4	41.59	Engineering	22.9	26.25
Photography	3	92.00	Nursing	7	41.20	Forestry	16.0	25.31
Publ. and Prtng.	2	79.25	Engineering(Other)	9	38.36	Oriental	11.5	24.39
Nursery Sch.	5	73.52	Soc. Sciences (Other)	9	33.53	Elect. Eng.	13.1	24.15
Slavic	5	72.45	Art	10	32.85	Earth Sci.	3.6	22.56
Drama	6	71.89	Economics	21	32.20	Near Eastern	12.1	20.85
Agric. Engin.	9	70.83	Political Sci.	8	30.21	Home Econ.	14.3	19.90
Comm. Art	8	70.81	Vet. Medicine	12	28.49	Slavic	9.4	19.30
Metal Trades	7	70.14	Machine Shop	17	28.28	Speech	10.0	19.08
Dental	6	66.53	Mett. Engin.	12	26.31	Agric. Sci.	6.9	17.14
Journalism	5	65.20	Industrial Arts	14	25.84	Physics	8.0	16.40

*NOTE: These costs should not be confused with average segmental costs. The figures represent the unit teaching cost of the highest cost program within a segment.

Each of the 15 high teaching subject areas cost at some Junior Colleges, in 1963, was higher than the highest campus teaching cost of a lower-division program at the University, ranging from approximately 200% to 1000% greater, and higher than all but one high teaching cost lower-division subject area at a State College. Approximately one-half (seven) of the individual high teaching cost subject area in the State Colleges were above the highest University cost. It is important to note that no single subject area appears in all three listings (i.e., common to all three segments).

TABLE I-7

Unit Teaching Costs for 15 Highest Cost Subject Areas
Upper Division
1963-64

STATE COLLEGES		UNIVERSITIES	
Economics	$184.67	Engineering Gen.	$267.33
Other Social Sci.	141.00	Nuclear Engin.	264.45
Physics	104.53	Earth Sciences	144.77
Journalism	99.00	P.E.	100.00
Welding	95.57	Agricul. Science	83.11
Mechanical Engin.	65.28	Forestry	74.21
Other Physical Sci.	62.62	Music	69.97
French	59.67	Classical	68.20
Music	58.48	Slavic	47.93
Art	57.27	African	47.28
Veterinary Med.	57.19	Speech	46.65
Chemistry	52.04	Near Eastern	45.59
Anthropology Arch.	50.61	Religious Inst.	44.69
Civil Engineering	45.61	Comp. Literature	42.20
Nursing	43.74	Arch. Engineering	40.13

Table I-7 and I-8 show the fifteen highest unit teaching cost subject areas, in 1963-64, at the upper division and graduate levels offered by single campuses of the University and the State Colleges.

TABLE I-8

Unit Teaching Costs for 15 Highest Cost Subject Areas
Graduate Division
1963-64

STATE COLLEGES		UNIVERSITIES	
French	$330.00	Spanish	$477.33
Physics	272.00	Speech	155.27
Chemistry	250.50	Oriental	114.49
History	134.17	Earth Sci.	110.41
Other Phys. Sci.	87.40	Economics	107.28
Forestry	84.74	Music	100.42
Agriculture	77.44	Near Eastern	98.74
Biological Sci.	71.58	Drama	92.04
Mathematics	70.21	Education	91.89
Economics	69.56	Physics	86.30
Art	66.60	Geography	86.00
Music	63.87	Italian	83.30
Business	61.68	Scandinavian	78.78
Spanish	59.80	Classical	75.32
Speech	56.77	Psychology	71.54

The common subject areas having high teaching costs at the upper division and graduate levels in 1963-64 in the University and the State Colleges were in certain specialties of engineering, music, and foreign languages.

Figures I-1, 2, 3, and 4 graphically display the range of unit teaching costs at the upper division and graduate levels in the University and the State Colleges for all standard subject area classifications. In these figures each point represents the highest individual campus teaching costs and associated mean class size by Standard Subject Classifications. An inverse relationship between unit teaching costs and mean class size is evident.

FIGURE I-1

STATE COLLEGES
UPPER DIVISION
UNIT TEACHING COSTS FOR ALL STANDARD SUBJECT AREAS

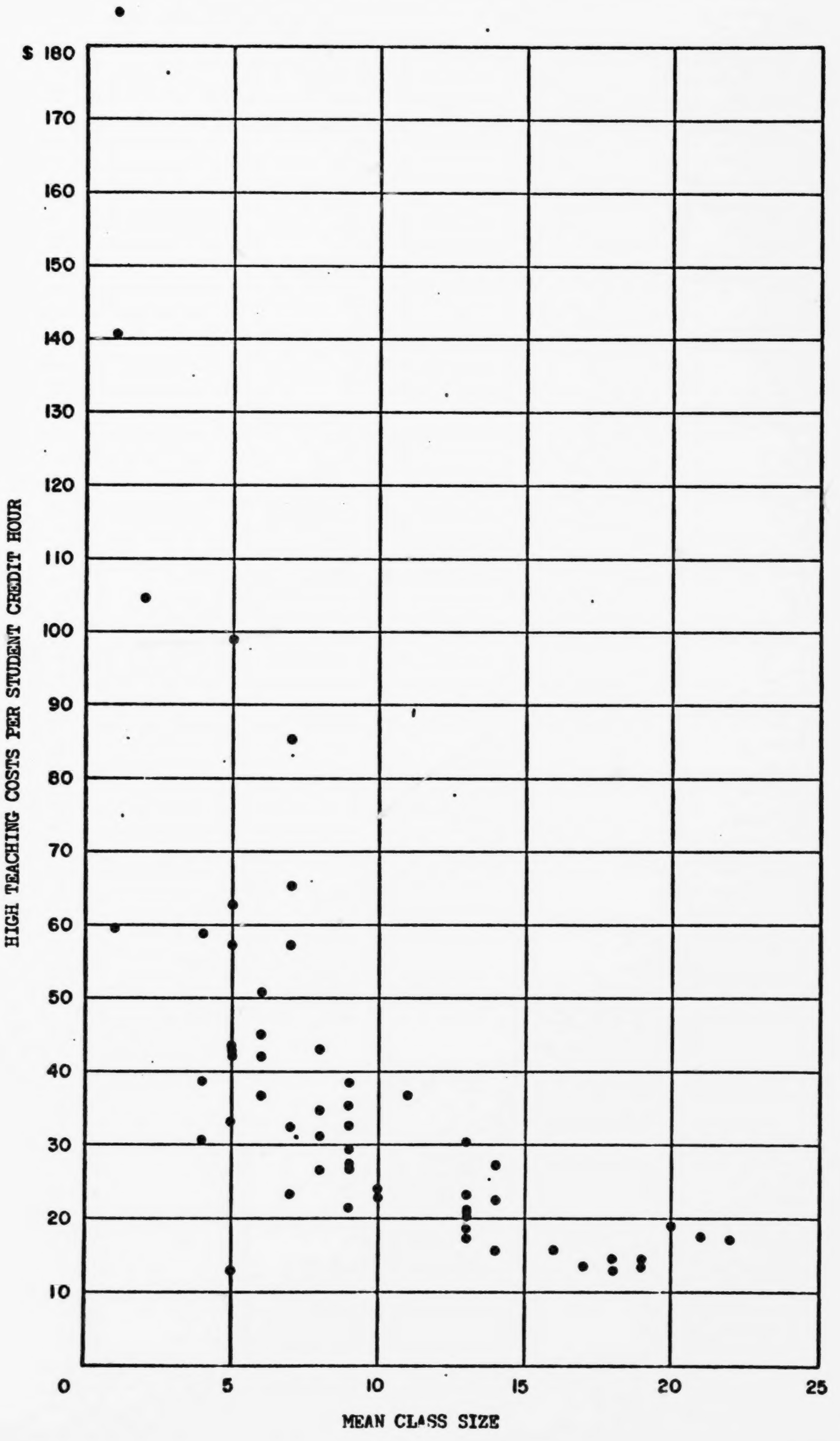


FIGURE I-2

UNIVERSITY OF CALIFORNIA

UPPER DIVISION

UNIT TEACHING COSTS FOR ALL STANDARD SUBJECT AREAS

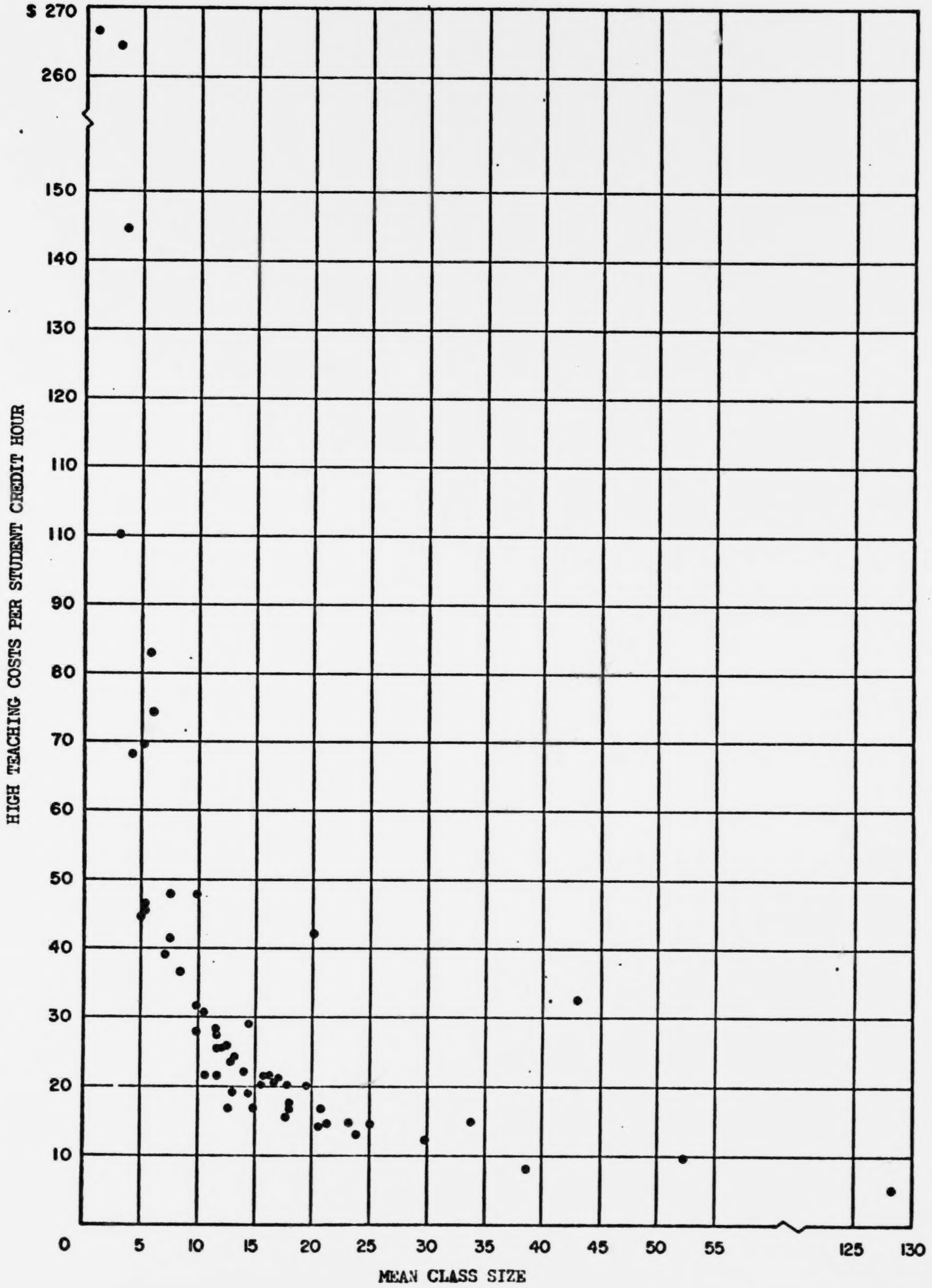


FIGURE I-3

STATE COLLEGES
GRADUATE
UNIT TEACHING COSTS FOR ALL STANDARD SUBJECT AREAS

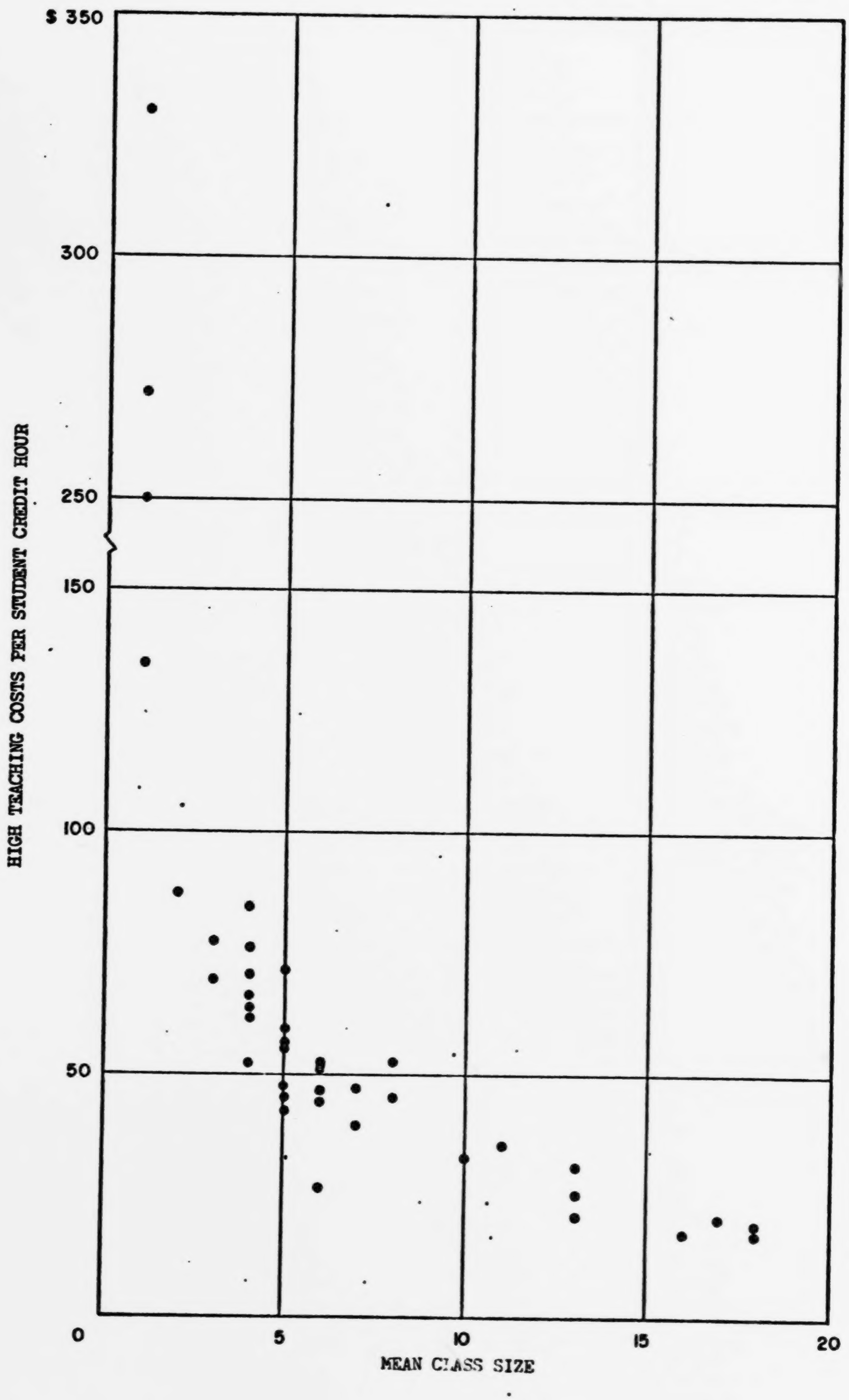
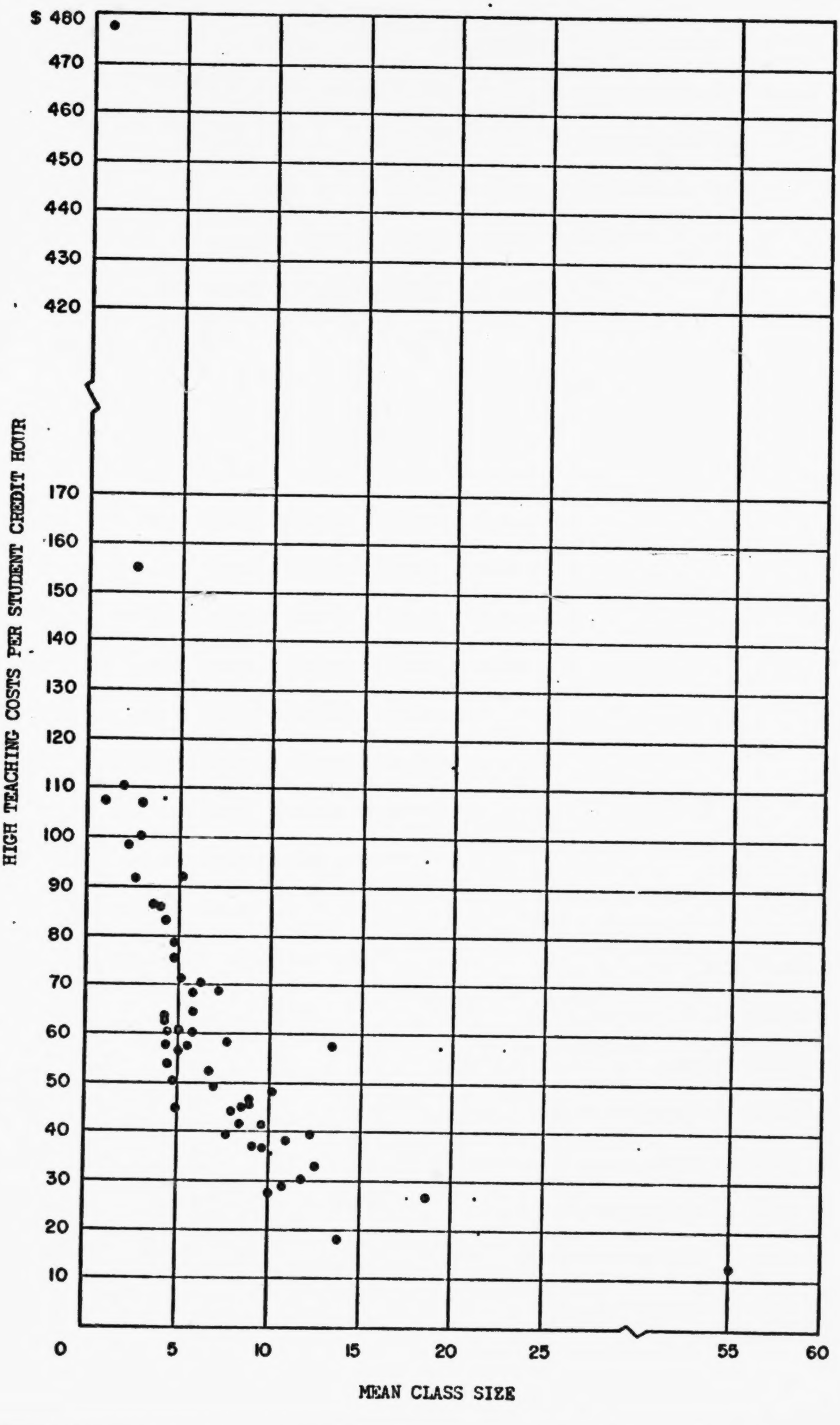


FIGURE I-4
UNIVERSITY OF CALIFORNIA
GRADUATE
UNIT TEACHING COSTS FOR ALL STANDARD SUBJECT AREAS



Teaching Costs of Selected Subject Areas

While several subject areas show high teaching costs on individual campuses of the Junior Colleges, the State Colleges, or the University, the teaching costs for several of these subject areas throughout public higher education warrant further examination. Only four subject areas are explored in greater detail below.

Library science is examined because, in 1963-64, it arose as the subject area having the highest cost, on one Junior College campus, within all public higher education in California. Journalism is singled-out because it arose as the highest teaching cost subject area at the lower division level in a State College and it also appears in the listing of higher cost subject areas in the Junior Colleges and at the upper-division level in the State Colleges. Teaching costs of art and drama are examined because these two subject areas are specifically mentioned in HR 376.

Library Science. In 1963, nineteen Junior Colleges and two State Colleges offered lower-division courses in library science; and one State College and one University campus offered graduate courses in library science.

The variation in unit teaching costs as a function of mean class size among all public segments are shown in Figure I-5. Another visual relationship of unit teaching costs can be obtained by plotting unit teaching costs for library science courses for each campus of the three segments on a line graph (See Figure I-6--distance up the scale is directly proportional to unit teaching costs).

From these graphs and associated data the following observations about unit teaching costs in the subject area of library science can be made:

1. The two most expensive programs, located on Junior College campuses (hence, lower-division), were more than 10 times the cost of the most expensive graduate programs.

2. Nine (of 19) lower-division Junior College programs were more expensive than the most expensive graduate programs.

3. Three Junior College offerings operated with teaching costs below the average unit teaching cost for the Junior Colleges.

4. All lower-division courses in library science in the State Colleges had lower unit teaching costs than the average teaching cost for the State Colleges.

5. All upper-division courses at the State Colleges and the University had lower teaching costs than the average for upper-division instruction.

FIGURE I-5

LOWER DIVISION
UNIT TEACHING COSTS
LIBRARY SCIENCE
ALL PUBLIC SEGMENTS

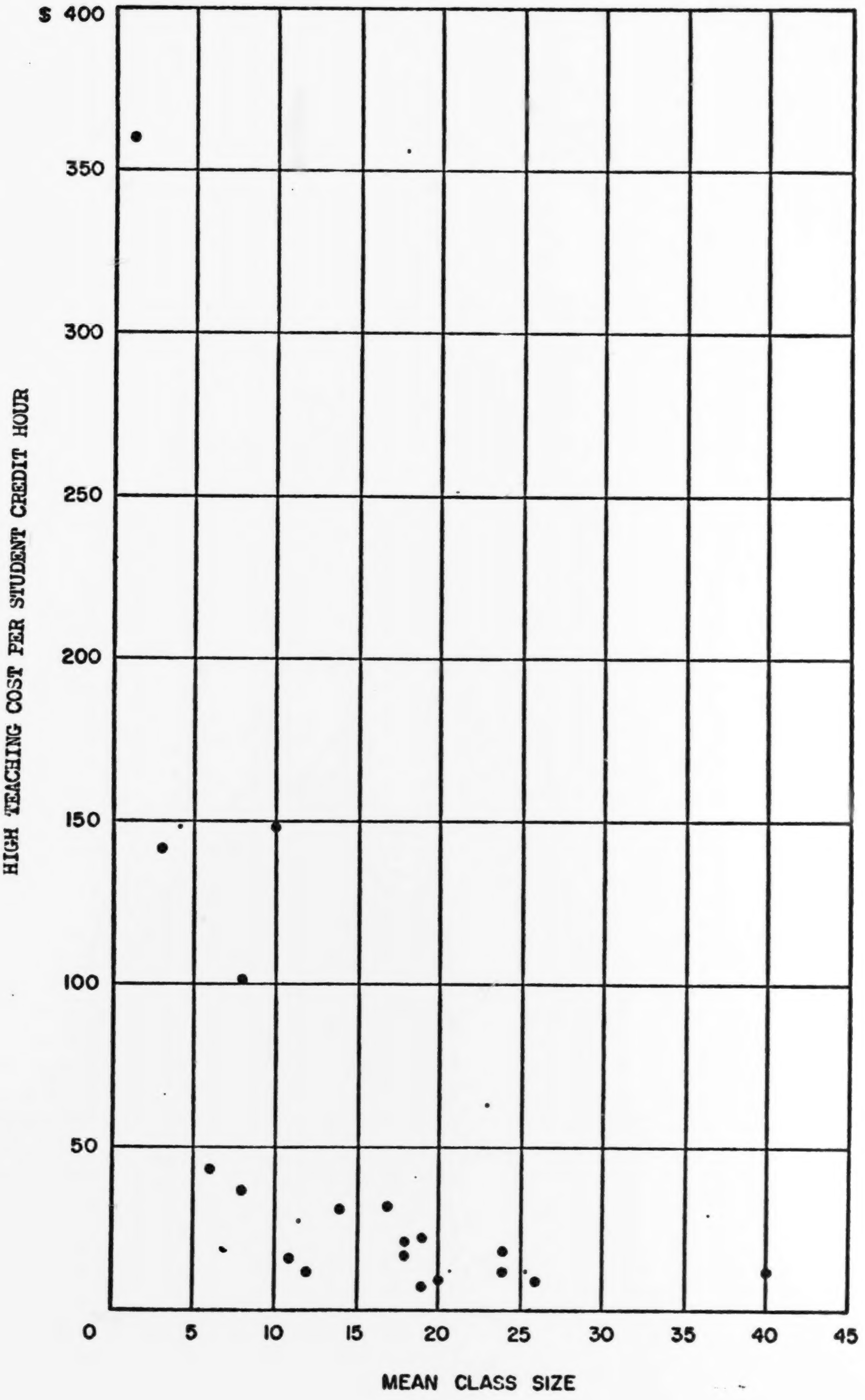
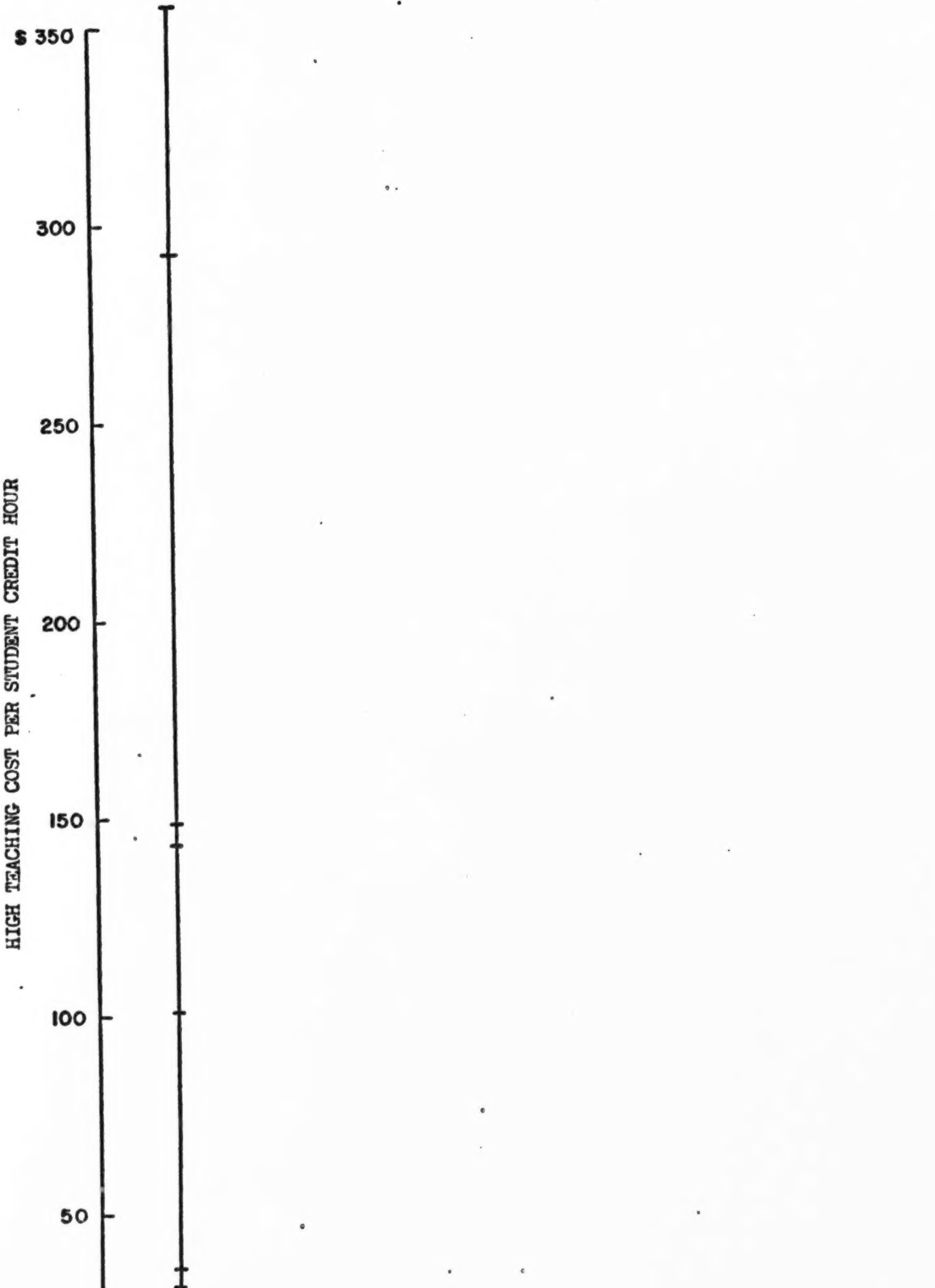


FIGURE I-6

LOWER DIVISION, UPPER DIVISION AND GRADUATE UNIT TEACHING COSTS

LIBRARY SCIENCE

ALL PUBLIC SEGMENTS



6. The teaching costs for graduate courses are considerably below the average for graduate teaching at the University or the State Colleges.

Journalism. The subject area of journalism was offered by all three public segments in 1963 and display a wide range of unit teaching costs (See Figure I-7).

In 1963, there was a ratio of 35 to 1 between the highest and lowest teaching costs. Six lower-division (one State College and five Junior Colleges) programs and one upper-division program (at a State College) were more "expensive" in terms of unit teaching costs than any of the graduate programs in journalism. Fifteen lower division programs (14 located in Junior Colleges and one in a State College) had higher unit teaching costs than the highest cost upper-division program.

A significant aspect of teaching costs in journalism was that both the highest and lowest unit teaching costs in this subject area were located on State College campuses--the highest cost being 35 times the lowest cost.

Art and Drama. HR 376 calls specific attention to proposed facilities in the areas of the performing and creative arts within the University and the State Colleges. For this reason, unit teaching costs for art and drama were examined using the 1963 cost data. Only lower division costs are cited here in order to include all three segments in the teaching cost observations.

Figure I-8 displays the range in teaching costs per SCH for art as a function of average class size. From these curves one can observe that the highest unit cost lower-division art program existed on a Junior College campus operating with an average class size of 5 students. The second highest cost lower-division art program was located on a State College campus operating with an average class size of 10 students. The next six high cost lower-division art programs were located on Junior College campuses followed by a lower-division program on a University campus. In contrast, the three lowest cost lower-division art programs were located on Junior College campuses. Average lower-division class sizes in art on the various campuses ranged from 5 students to 42 students with unit teaching costs ranging from approximately $40 per SCH to $5 per SCH.

While Figure I-8 shows unit teaching costs for art to be closely related to class size, Figure I-9 shows that unit teaching costs for drama are not as directly related, indicating stronger influence from other factors such as instructional practices. From Figure I-9 it can be observed that one University campus operating with an average class size of 37 had a unit teaching cost nearly seven times as great as another University campus operating with an average class size of 39 students. This difference indicates that

FIGURE I-7
LOWER DIVISION, UPPER DIVISION AND GRADUATE
UNIT TEACHING COSTS

JOURNALISM

ALL PUBLIC SEGMENTS

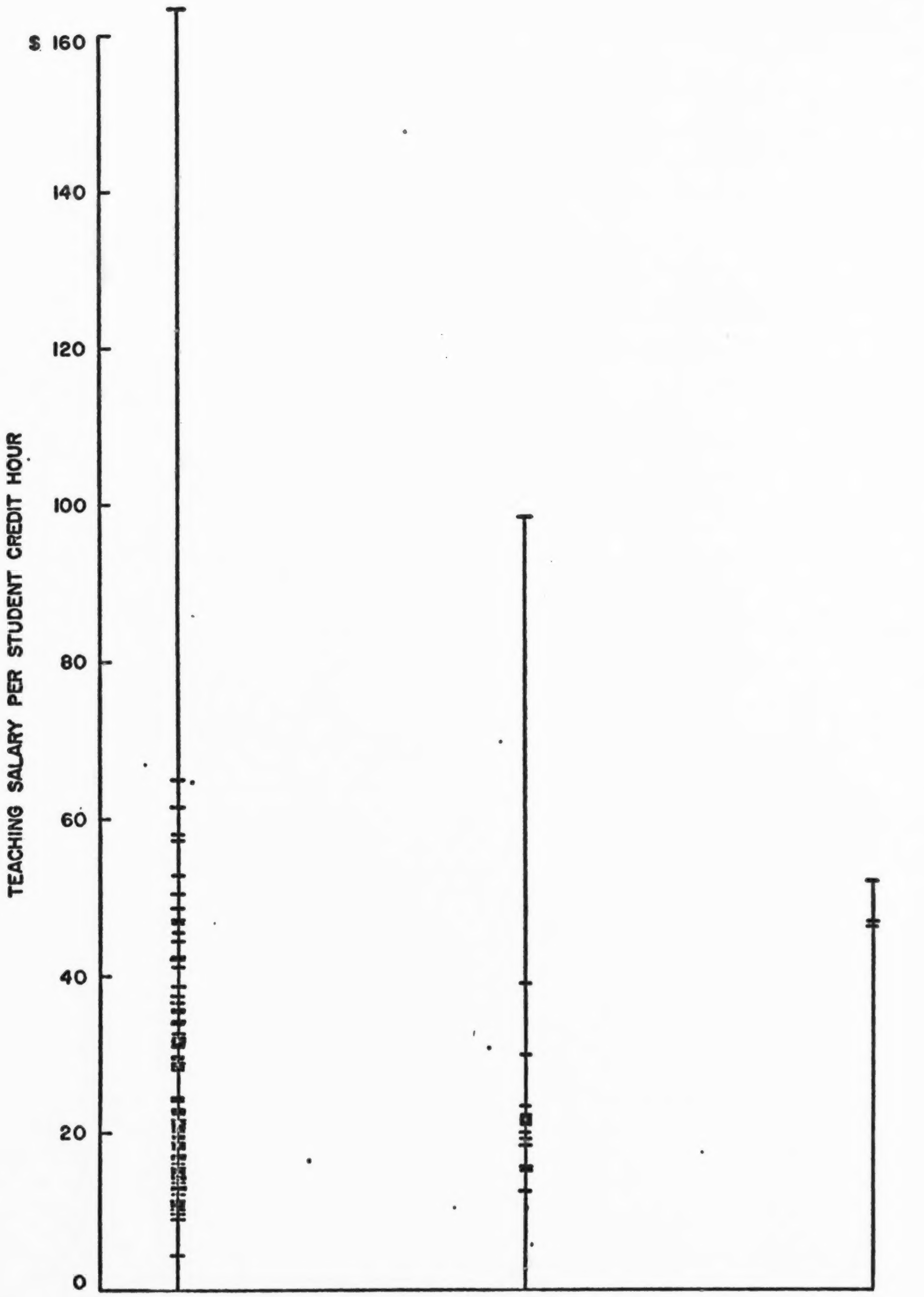


FIGURE I-8

LOWER DIVISION UNIT TEACHING COSTS

ART

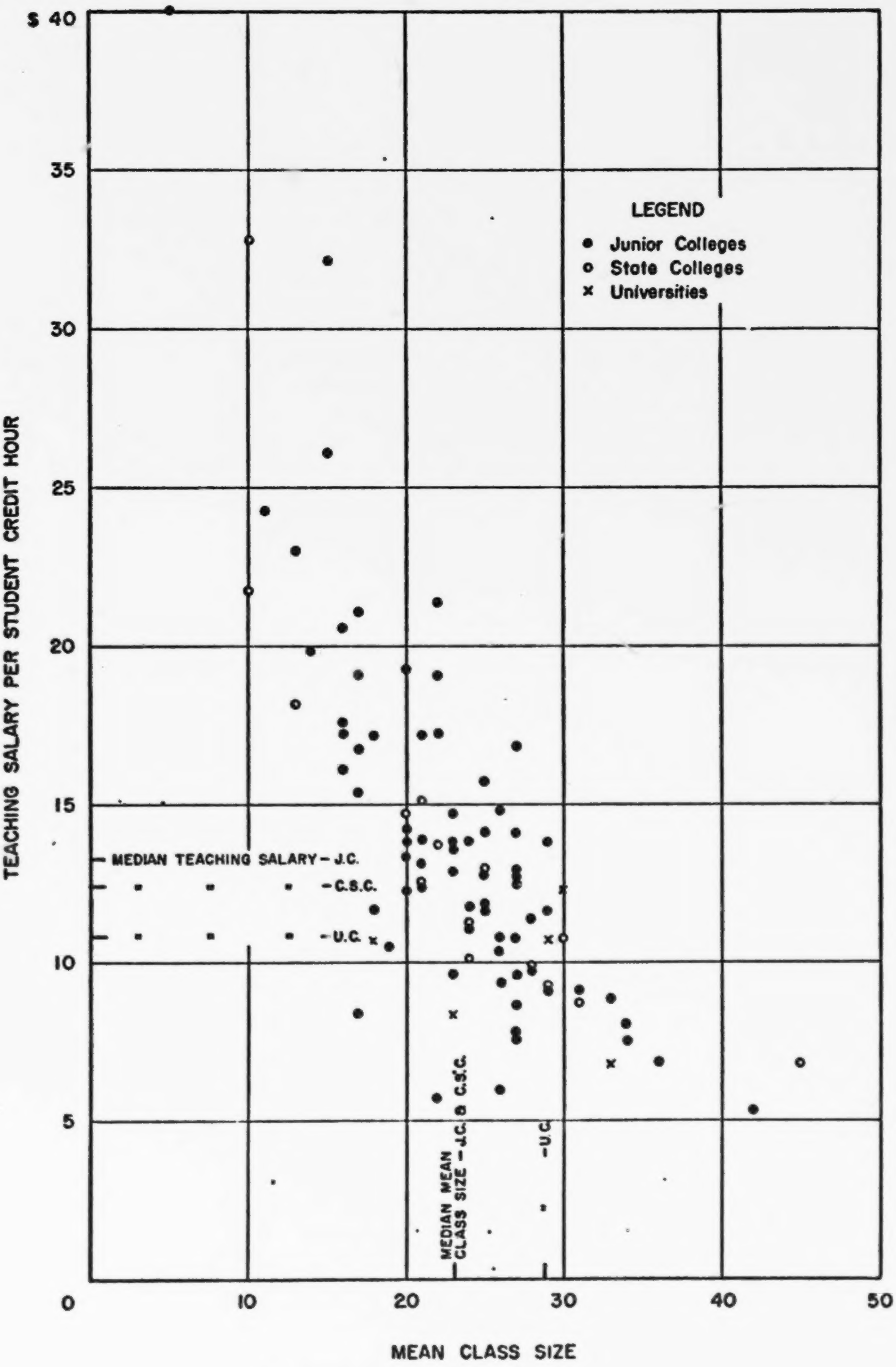
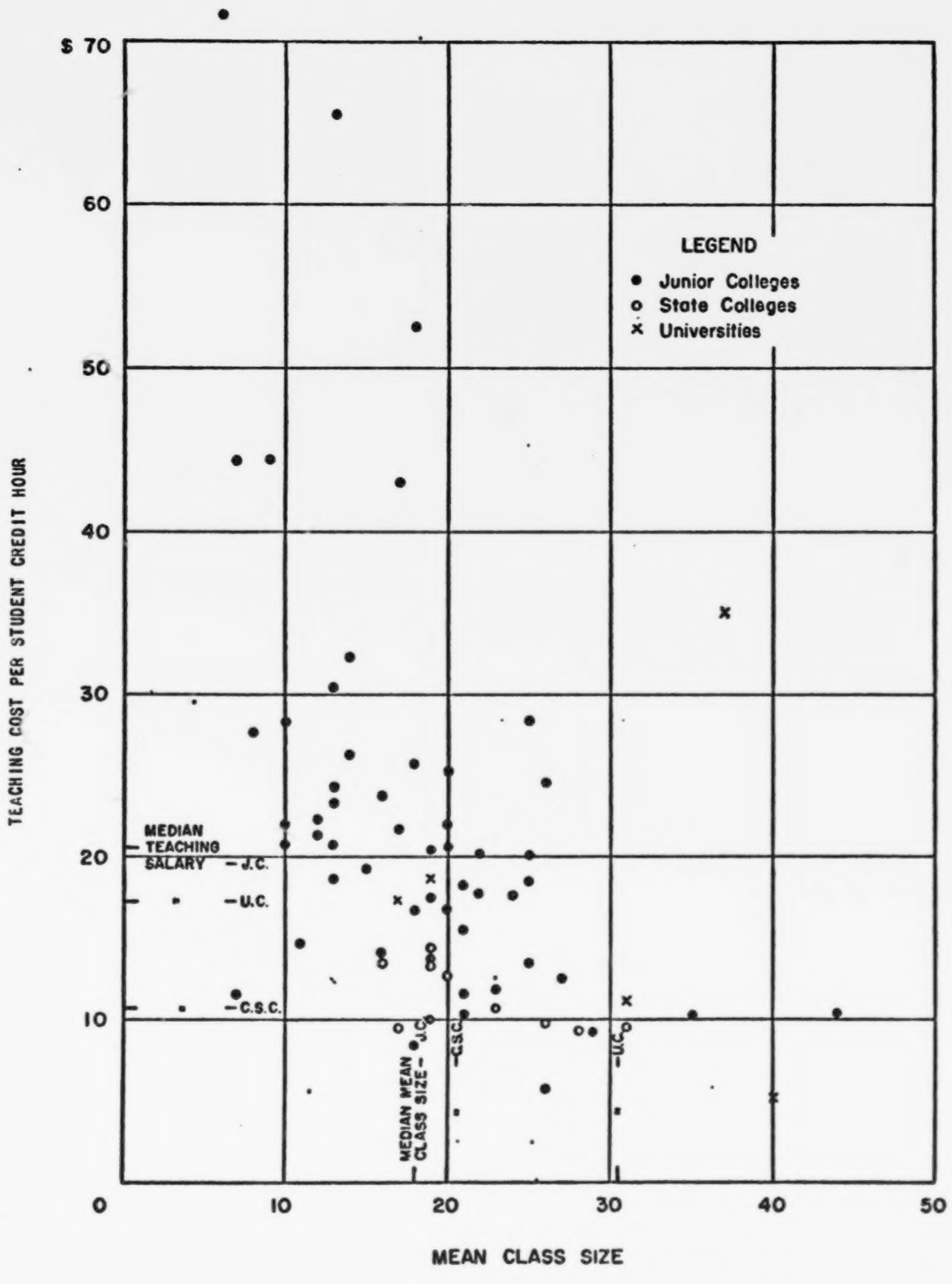


FIGURE I-9

LOWER DIVISION UNIT TEACHING COSTS

DRAMA



other factors than class size are operative. The lowest average class size in lower-division drama on a State College campus in 1963 was 16 students, sixteen Junior Colleges operated programs with class sizes of 16 or less. Three lower-division programs in drama at the University had higher unit teaching cost than the highest cost State College program and thirty Junior College programs operated at a higher unit teaching cost than the highest cost State College program.

The median lower-division teaching costs for art and drama are given in Table I-9. For comparison, the average segment's teaching costs are also shown.

Table I-9

MEDIAN UNIT TEACHING COSTS--ART AND DRAMA, 1963-64

	Median - Lower Division Unit Teaching Costs		Average Segmental Teaching Costs -all disciplines-
	Drama	Art	
JC	$20.60	$13.28	$15.28
CSC	10.78	12.45	13.66
UC	17.39	10.69	12.15
Three segments combined	18.03	12.77	

	Median - Average Class Size, Lower Division	
	Drama	Art
JC	18	23
CSC	20	23
UC	30.5	28.9
Three segments combined	19	23

Support Costs

A study of "highly expensive, specialized, limited-use academic programs and facilities" cannot be limited to the two elements of facility costs and unit teaching costs. Many other cost elements are involved. One of them is the cost of support such as secretarial assistance, student assistants, technicans, supplies, and recurring equipment costs. The accounting systems used by the Junior Colleges and the State Colleges do not permit an examination of these costs because instructional area allocations are rarely published. On the other hand, the University makes allocations of supporting funds per academic FTE to departments.

Other Program Costs

Beside teaching expense, facility costs, and support costs many other elements of cost such as departmental research at the University, the time of teaching faculty (and related expenses) devoted to departmental administration, institutional administration, public and professional services, student activities and counseling, and other costs such as library, and plant operations should be evaluated in any consideration of "high cost" programs. At this time it is not possible to examine total program costs within public higher education in California on a comprehensive basis due to the lack of data. These data will be derived only through comprehensive and continuing cost studies.

Summary

HR 376 directs the Council to undertake a study of highly expensive, specialized, limited-use academic programs and facilities.

From the foregoing discussion it can be seen that the Council cannot respond to this request fully due to the limited amount of data that is available to Council staff. The problem lies in the fact that comprehensive data which will lead to identification of highly expensive, specialized, limited-use, academic programs and facilities are not available from the segments.

In 1966, the Council staff, having become increasingly aware of the need for better data in higher education, met with several representatives of other state coordinating agencies who were gathered to discuss the need for comparable inter-institutional and interstate cost data for evaluating similar academic programs. In May 1967 the Western Interstate Commission for Higher Education (WICHE) convened a second meeting to consider the desirability and feasibility of several states conducting simultaneous studies of higher education costs. The group, composed of institutional as well as agency representatives, agreed that an interstate approach to higher education cost and output analysis was not only desirable but essential. On behalf of the institutions and agencies in the western states, WICHE prepared a proposal which described the project and sought funds in the amount of approximately $1.1 million for development of the system. The project has been funded.

The project will include institutions and agencies in the western states including Alaska, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. In addition, the Illinois Board of Higher Education and the State University of New York are cooperating in the project. The proposal described the need for comparable management information data as follows:

> The rapid growth in size and complexity of higher education has highlighted the need for systematic collection and use of data in the effective management of colleges, universities, and state systems of higher education. Without systematic, accurate feed-back to

> management of the effects of its operations, an institution or system can waste its resources on ineffective or unnecessarily costly activities. Judgments about effectiveness and relative costs, however, cannot be adequately made in isolation. Hence, the need also for comparable data from other organizations of similar complexity and with similar missions.
>
> Higher institutions are increasingly called upon to account for the stewardship of their funds not only in terms of their amounts and allocation but also the benefits gained therefrom. Legislatures wish to know what the public is getting for its tax dollar. They would like to know if some ways are better than others for achieving the objectives of higher education. They would like to find ways of measuring the performance of educational programs. Institutions do a great disservice to themselves and their public and private supporters when they do not make reasonable information available concerning actual program costs and how these costs relate to the achievement of the institution's objectives.
>
> There are also compelling internal reasons for the development of more sophisticated cost and output analyses. The resources available to colleges and universities are limited. The rising costs of maintaining existing programs, increasing numbers of students to be served, the necessity of improving quality and the demands for new and expanded services present the college administrator with an array of difficult decisions. In justifying rising budgets and deciding where to allocate scarce resources the administrator should be able to calculate the costs of various alternative courses of action and relate them to some measure of achievement of institutional objectives. Most institutions have made little progress toward such a capability.

The California Community Colleges, the University of California, and the California State Colleges, as well as the Coordinating Council and California private institutions (through AICCU) are represented on the study steering committee. Initial phases of the project will produce minimum instructional cost data such as,

- Cost by level of student
  - Lower Division
  - Upper Division .
  - Graduate Division
  - Master's Level
  - Professional
  - First stage doctoral
  - Second stage doctoral

And by level of course
And field of study such as
- Agriculture
- Veterinary Medicine
- Biological Sciences
- Mathematical Sciences
- Physical Sciences
- Engineering
- Social Sciences
- Psychology
- Art
- Letters
- Professions
- Physical Education
- Military Science
- Vocational Technical
- Special Community Junior College Fields
- All Other

The project began on June 1, 1968. Since it was conceived and funded as a five-year project, it is not scheduled for completion until May 31, 1973. Only after a management information system (MIS) is developed and implemented by the public segments of higher education in California can the Council undertake the thorough study of highly expensive academic programs and facilities called for in HR 376. Both of the four-year segments have embarked on development of elements of MIS. The Junior Colleges lack resources and experience to develop a compatible system. Special recognition of their needs may be required in the near future.

Interim Course of Action for the Council

Studies of single subject areas have been and are undertaken by the Council staff--for example, Council studies of engineering, medical education, dental education, nursing, planning, marine sciences. However, broad studies designed to identify "highly expensive" programs and facilities require the public segments to have operational management information systems. Lack of these systems impedes the segments, the Council, the Department of Finance, the Legislature and the Governor in their quest to improve the capability of these institutions and agencies to more effectively allocate resources.

Earlier sections of this report point up that opportunities for cost reduction lie in the realm of unit costs. But unit costs cannot be determined by facility costs alone, or teaching costs alone, or support costs alone and that other cost factors need be taken into account. A particular subject area may necessitate high facility costs (e.g., music, drama, agriculture, and certain technologies), yet its teaching costs may be considerably less than the costs of other areas (e.g., less than the costs of library science, journalism and languages as demonstrated by the 1963 cost data).

The California and Western Conference cost study noted that, "It is nearly always possible to alter the costs of education, but it is not possible to say categorically that an increase in cost will improve the quality of an environment or that a decrease in costs will weaken it. Cost realities considered, the challenge to faculties and administrations is to use their resources efficiently while continuing to seek ways of creating the best possible environments for advancing and disseminating knowledge." The study concluded that costs of instruction are affected by:

1. Size of classes.
2. Method of instruction (nonlaboratory and laboratory classes, individual study and research).
3. Total volume of teaching activity.
4. Faculty teaching load.
5. Faculty salaries.
6. Expenditures for secretarial assistance, supplies and others.
7. Physical plant, including
    a. type of facility
    b. degree of utilization of that facility.
8. Administrative and general expenses.

A system to provide comparable data which includes these cost elements is under development. Until the management information system is implemented an interim role for the Council is recommended.

The California and Western Conference Cost and Statistical Study and the 1963 California Cost Study show that high or low unit costs are not peculiar to specific subject fields. Significant variations in unit costs exist among institutions within subject fields. Both studies concluded that the number of weekly student-class-hours per F.T.E. teaching-staff member is the most important factor in explaining variations in unit costs. This is basically a measure of teaching assignment; it also reflects class size. A generalized conclusion may be drawn that unit costs can be most easily changed by changing the ratio of students to staff in the specific subject field. Additionally, methods of instruction definitely affect cost. Their effect, however, is in terms of their influence upon class size, teaching load, and other factors bearing upon costs. In particular, the California Conference study noted that over the whole range of the data (at all levels of instruction for all institutions and subject fields) approximately 92 percent of the variation in unit teaching costs could be explained by variation in teaching assignment and that; for the entire range of data, a coefficient of correlation of 0.96 existed between unit teaching costs and the reciprocal of the number of weekly student-class-hours per F.T.E. teaching-staff member. These observations appear to be verified by the

1963 cost study conducted under Council sponsorship--for small classes unit teaching costs far outweigh the cost of facilities or support and become the predominant factor.

A principal factor leading to high unit teaching costs is small class size. Small class sizes may result from instructional practices within an institution; however, they also develop from having too many programs for relatively small student demands. In public higher education in California, Junior College districts determine academic programs with little regard to the offerings of other Junior College districts, the State Colleges develop master academic plans with little regard to academic offerings and plans of the University and the University develops academic plans with little regard to what exists or is planned in the State Colleges. From time to time the Council has become concerned about these independent developments and has called for studies of specialized areas. Although the Council is charged under the Donahoe Higher Education Act with development of plans for the orderly growth of public higher education and the making of recommendations on the need for and location of new facilities and programs it has, through a series of compromises within segmental committees, nearly vacated its charge to concentrate programs and facilities at strategic locations within the state's higher educational system. Coordination of academic programs is not only fundamental to effecting a reduction in total state expense but to the provision of high quality viable programs as well. Insufficient or ineffective statewide planning and coordination of academic programs may not only lead to high unit teaching costs but new academic programs trigger the need for new facilities and support costs to accommodate the program. Action begins with approval of the academic program--this is the point at which planning and coordination must take place.

Currently, academic review procedures adopted by the Council do not include the Junior Colleges, excludes review of all undergraduate programs and many programs leading to the master's degree in a list of broad foundation studies for the State Colleges, and includes only those areas requiring change in the Standing Orders of the Regents of the University of California which relate to the establishment of new schools or colleges.

Academic planning is the hub to the wheel of facility and budget planning. All cost and quality factors center around academic planning of institutions and segments with due regard for the academic programs of all segments. While it is true that academic planning has generally been considered a function of the faculty, rising enrollments and costs of universities and colleges call for academic program review at echelons above the campus level and, in a tripartite system, call for program review at statewide coordinating levels.

By no means should cost considerations be the sole factor considered in program reviews. The fact that it costs less to instruct freshmen students in English, history and mathematics than to provide instruction for seniors and graduate students in specialized fields does not mean that one task has priority over the other. At the same time institutions need to experiment with a variety of instructional methods which may, at any given time, lead to wide variations in cost. It is possible, however, to concentrate certain programs and facilities at strategic locations for the benefit of the student, the faculty and the state.

In summary, the Council cannot respond fully to HR 376, because the necessary comparable data are not produced by the public segments of higher education in California. All three segments are participating in a Federally sponsored project which will provide comprehensive and continuing management information beginning in approximately 1973. In the interim it is recommended that the Council reconsider its current academic program review procedures directed toward reducing non-viable programs and providing coordinating planning among the three public segments. Since an institutional budget is simply a statement of educational planning in terms of dollars needed for salaries, facilities and support for the various academic programs, the objectives of HR 376 can be accomplished through coordinated academic planning including all three public segments of higher education.

While small class size appears to be the most influential factor in program costs, programs with low activity serve as an indicator of subject areas where small classes may exist.

Section II presents data from the first educational program survey prepared for the Council. The focus of this survey are those programs of low activity as indicated by several measures. Though low activity in a subject area does not necessarily indicate small class size and consequent high cost, it is believed that in many instances such will in fact be the case. For this reason, the program survey, though not exclusively directed to the intent of House Resolution 376, is presented as an interim response to the call for analysis of high cost programs.

SECTION II

SURVEY OF PRESENT AND PLANNED PROGRAMS
UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE COLLEGES

A. Introduction to the Survey

Background for the Review

The Donahoe Higher Education Act directs the Council to develop plans for the orderly growth of public higher education and, more specifically, assigns it the function of "making recommendations on the need for and location of new facilities and programs."

In light of this directive, acting under procedures approved in 1964 (amended and readopted in 1966), the Council has undertaken to review certain program proposals of the University and State Colleges.[1] The limited number of programs which have been reviewed in the past four years involve primarily new professional schools or research centers. Most new degree programs, whether at the graduate or undergraduate level, have not been the subject of review as they fall beyond the classifications selected for Council review under the 1964 procedures. The sole exception is the degree program which is not offered by any other campus or college in the respective segment.

As pointed out in previous reports to the Council, existing program review procedures have provided very limited opportunity for the Council to comment on the plans of the two four-year segments and to advise on their development. Also, in the case of the University the procedures have resulted in the referral of some matters of purely internal concern, such as the change in name of a particular research center. For the State Colleges, no new program proposal has been referred to the Council since March 1967 though according to the present academic plan, a number will be in the future.

The 1966 amendments to the procedures--an outgrowth of the review of impact of the procedures themselves--established specific dates upon which the Council should receive the academic plans of the University and State Colleges and provided for a review and comment upon their contents. The amendments reflected continued Council concern over its role in "planning for orderly growth" as well as rocognition that the academic plans of the two segments had reached a level of comprehensiveness and detail to enable meaningful comment to be made. It was from review of the 1967-68 versions of the academic plans that the Council directed attention to program plans in environmental design and the marine sciences. Consultant's reports on these subject areas will be made in the summer, 1969.

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[1] Previously, the Council took some actions on new programs in the context of its annual review of the State College and the University budget proposals, now discontinued.

In an effort to improve its role in respect to academic program planning the Council in March 1968 directed the staff to prepare a proposal for a survey of educational offerings.[1] A proposal was approved in principle in May 1968.[2]

Several factors indicated the desirability for the Council to conduct a survey of educational offerings of the State Colleges and University. They were as stated to the Council:

1. The Council is charged with the development of plans for orderly growth. An initial element in any planning effort is to survey that which is currently available and the extent to which it is utilized. Annual comprehensive surveys will enable studies of specific subject matter areas to be more complete as well as identifying areas where such studies are needed.

2. The Council should be assured of the prudent use of public funds. Apparently unnecessary duplicatory offerings, unless explained by age of institution or other special circumstances, do not appear to be prudent use of higher education resources and facilities.

3. A more complete knowledge of the current pattern of offerings and their level of activity will enable a better review of academic plans and new programs than has heretofore been the case. An increase in the general level and sophistication of planning and continued review of on-going activities should be the result.[3]

The Survey

Any college catalogue gives some notion as to the scope of an institution's offerings. Many program inventories conducted by coordinating agencies are limited essentially to a compilation of catalogue statements within some sort of uniform program designation. While some sense of variety is provided by such inventories, the level of student demand for the programs listed, the "output" of programs and plans for additional, similar programs are lacking.

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[1] A staff paper prepared for the March 1968 meeting of the Committee on Educational Programs is included as Appendix D. The paper presents additional background concerning possible Council roles in program review and planning.

[2] This proposal is included as Appendix E.

[3] Committee on Educational Programs, agenda item, "Preliminary Plan . . .," May 20, 1968.

As the data collection capabilities of the systems of higher education improve, it is becoming possible to conduct more meaningful surveys and to move beyond the "inventory" stage to identify areas for specific attention--where plans may be beyond immediate demand as measured by present performances or where new programs are not developing in the quantity needed or perhaps in the most desirable locations. Linkage with manpower studies in specific areas is a further step when, and if, meaningful studies are produced.

The Council staff has sought to place in juxtaposition several kinds of data which may indicate, to a fuller extent than in the past, the areas to which the Council and the segments should perhaps devote themselves as existing programs are reviewed and new ones planned.

It must be pointed out that any survey seeking to review programs and plans in all areas does not fully take into account all facts bearing on a particular program. For this reason this survey sets forth areas for study only. Subsequent study in detail is necessary to determine what actions if any should be taken.

In the survey the following has been related using data provided by each segment:

1. Program (As defined by each segment. Generally synonymous with student major and/or degree.)
2. Degree programs offered and now planned in approximately the next five years, undergraduate and graduate.
3. Fall 1967 Student Credit Hours produced by--
    a. Institution
    b. Level: lower division, upper division and graduate
    c. Program classification
4. Numbers of degrees granted 1967-68 by institution, by program, undergraduate and graduate levels.
5. Numbers of student majors fall 1967 by--
    a. Institution
    b. Level
    c. Program
6. Additional commentary provided in the academic plans.

These data by program or groups of programs were then reviewed to determine if there appeared to be possible need for further study or planning review.

Qualifications. Any survey of this nature must be conducted with a number of reservations. Some of these include:

1. Current data collection forms make it difficult to describe every program in terms of student majors, credit hours and number of degrees produced. There are some "programs" which are not degree programs as such, but categories within which student credit hours are assigned.[1] On the other hand, the degree awarded may be difficult to assign to a program classification. This is especially true for some self-determined or interdisciplinary majors composed of a composite of offerings from several departments. Variation is also found among colleges or campuses in assigning student credit hours. For example, the category "biology" may be used in one institution, whereas, "biological sciences" may be used by another. The diverse handling of area studies and of foreign languages are other cases in point. However, there was found to be substantial agreement in classification in most instances, thus, permitting reasonable comparisons to be made.

2. Concentration on any one measure can be deceptive. For example, in one instance few degrees may be produced in English. However, English departments typically provide "service" offerings to majors throughout the college or university. Degrees produced in the form of English majors are thus largely a benefit from the service requirements. However, if very low activity was found in graduate seminars in English and the college was offering a master's degree with few takers, then possibly some concern might be indicated. Similarly, for the University in particular, a low activity field of study limited to one University campus in the system is fully justified in view of the functions of the segment. However, the existence of two such programs might give rise to possibilities of phasing one out.

3. Age of program and institution, of course, qualify all measures. Most new colleges, for example, have low enrollments and degree production in some programs that is sure to grow. The present survey is limited to one point in time. Historical data, however, may be brought to bear to provide the required perspective.

Method. The four primary bodies of data were recorded by program and by college so that the data could be viewed for a whole segment--and for both segments together as desired. A number of possible criteria for analysis were considered. For example, all programs which generated fewer than 100 student credit hours at the upper division and graduate levels respectively were flagged in an initial review. Results were found to be misleading and one-dimensional in considering groups of programs. Another approach was to examine each program or subject area in depth only when additional ones were being proposed. This, however, included most programs. Still another criterion could involve using arbitrary numbers of degrees granted as being indicators of a "high" demand or "low" demand program. Combinations of the above could be used as well.

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[1] For example, SCH may be recorded for "creative arts" for a particular college. There are no recorded student majors or degrees. The program classification of "art", "dance", etc., might be where degrees and majors would be recorded which could be related to the SCH for creative arts.

A primarily subjective review of the data appeared to be the most productive in this, the first pilot effort. Lacking agreed upon norms, it seemed best to examine the data as laid out in terms of relationships of similar programs in college "y" to those in college "x" and so on, taking note of the several measures of activity. If few degrees were awarded at both "y" and "x"--generally less than 10 each--with corresponding low student credit hours--and a new program planned at "z", then the program was flagged. Effort was made to look at whole subject areas. For example, if several programs within the agricultural sciences area appeared to be of low activity, then the question of proposing specific study of the whole subject area was considered together with the reasons supporting such study.

Two subject areas were not included in the review as they are currently subjects of individual consultant's reports to the Council: marine sciences and environmental design. The health sciences were not reviewed due to their special nature and because of other pending reviews. Engineering was not included in view of the recent Council-sponsored study. Finally, other kinds of data could be included in future reviews. For example, ranges of class size and number of courses offered can assist in indicating the efficiency of a program.

The following presents data and comment concerning some of the more significant subject areas which were identified in the survey as possibly susceptible to review because of apparent limited demand in respect to the existing number of programs offered and planned, or where expansion might be especially warranted. Future reviews of this nature, should they be conducted, may identify other areas as situations change.

Again, it should be emphasized that individual circumstances explain a given program's size and productivity. Consequently no judgments other than need for possible review in depth should be made wholly upon the data presented herein. Detailed analysis of instances must proceed before any final determinations.

(A recently completed survey, Appendix F, indicates the changes in curriculum requirements over the past ten years and is useful in viewing the system programs overall. Curricular changes, of course, influence the level of activity in certain kinds of programs to a great degree.)

B. Program Review, C.S.C. And U.C.

The programs and subject areas described following have been selected following review of the statistical information published by the State Colleges and the University. The summary tables and the brief commentaries are necessarily limited by the form of the data. Any statistical or summary presentation cannot explore fully all of the reasons behind the enrollment, size or production of degrees in a specific program or subject area. The commentary presented is intended to suggest what may be called for based upon the information at hand.

In considering tabular material it should be noted that undergraduate enrollments are for full-time students only. Particularly in the State Colleges, part-time enrollments increase enrollments to some degree, though typically by not a great factor at the undergraduate level. On the other hand, enrollments in majors for graduates are total figures. Part-time students are quite common in State College graduate programs;[1] however, to leave these numbers from graduate figures would very seriously understate the magnitude of their programs. There are proportionately few part-time students either on the undergraduate or graduate levels in the University.

A final reminder: an objective of this review as pointed out in the Preface is to identify the need for forward-looking planning of programs. The report has not been developed to criticize what has been established in the past.

The pages following consider a number of programs, or subject areas, which have been identified in the survey of statistical data at hand supplemented by the most recent academic plans of segments. Future analyses may disclose other areas in particular need for emphasis.

The program areas considered are:

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[1] Part-time students in the State Colleges are defined as students carrying six units or less.

	Page
Conservation of Natural Resources	II-8
Agriculture	II-10
Home Economics	II-13
Dramatic Arts	II-15
Law Enforcement and Corrections	II-18
Foreign Languages	II-20
Graduate Anthropology	II-28
Graduate Geology	II-30
Graduate Physics	II-32
Area Studies	II-34

Comment is also made concerning certain programs in only one segment. The programs include:

Graduate Programs in Administration (U.C.)	II-36
Radio and T.V. (C.S.C.)	II-37
Art and Music (C.S.C.)	II-38
Religious Study (C.S.C.)	II-39

In addition to the above areas, the Council staff is requesting additional details concerning certain graduate programs which appear to have low activity and where there is more than one existing program or an additional one planned. For the University these programs are: agricultural chemistry, biophysics, biostatistics, comparative biochemistry, and endocrinology. Information concerning planned graduate programs in entomology at the State Colleges is also being requested.

Conservation of Natural Resources

A number of programs in both the University and the State Colleges may be placed under the general classification of studies concerning conservation of natural resources. Data in the various specific subject areas are as shown in Table II-1.

The subject of the use, management and preservation of human and natural resources is of major importance to California as well as the country. Both the University and the State Colleges have recognized this need in establishing a number of programs for occupational training and research, some of which are listed in Table II-1. The importance of the subject area suggests the need for comprehensive study of existing and needed programs to assure efficient operations of those now in existence and the planning for new programs and their locations in the two systems.

Table II-1
PROGRAMS IN CONSERVATION RELATED SUBJECTS
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
STATE COLLEGES:	Degree[a] Programs 1968	Proposed New Programs[b] (Undergraduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
Cal Poly-K.V.										
Park Administration	B	-	444	6	17	-	-	-	-	-
Water Resources	-	B	-	-	-	-	-	-	-	-
Sacramento										
Environmental Resource Management (similar to Park Administration)	B	-	339	60	20	-	M	-	-	-
San Jose										
Conservation	B	-	523	37	5	-	-	-	-	-
Humboldt										
Fisheries	B	-	724	121	35	M	-	45	29	4
Forestry	B	-	1,266	309	66	M	-	9	8	-
Natural Resources	B	-	480	89	17	-	M	-	-	-
Range Management	B	-	397	not reptd	1	-	M	-	-	-
Watershed Management	-	-	121	not reptd	-	M	-	3	3	-
Wildlife Management	B	-	458	237	48	M	-	47	19	2
	(9)	(1)		(859)		(4)	(3)		(59)	
UNIVERSITY:										
Berkeley										
Forestry and Conservation	B	-	491	64	23	M, PhD	-	243	102	10, 0
Range Management (Curriculum offered in connection with Davis)	B	-	36	not reptd	-	M	-	7	4	1
Davis										
Preforestry	B	-	not reptd	20	-	-	-	-	-	-
Range Management	B	-	73	12	2	M	-	3	2	-
Wildlife & Fishery Biology	B	-	not reptd	not reptd	-	-	-	-	-	-
Park & Recreation Administration	B	-	not reptd	2	1	-	-	-	-	-
Ecology	-	-	-	-	-	M, PhD	-	not reptd	not reptd	-
	(6)	(-)		(98)		(4,2)			(108)	

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[a] As indicated in Academic Plan supplemented by other data.

[b] As indicated in Academic Plan for CSC degrees shown as BS 68, etc, are considered as proposed new programs.

Agriculture

Both the California State Colleges and the University of California have large programs in agriculture. The University, as well, conducts major research operations in a number of different agriculture-related subjects. Because of the many degree programs and specialties--there are, for example, some 32 program designations among the four State Colleges offering agricultural programs--it is difficult to present a meaningful summary of the status of agricultural programs in the two systems for this survey report.

Examination of the tabulations of programs discloses individual items of possible interest concerning State College programs and plans:

a. Pomona and Fresno offer agriculture and inspection service majors. The former produced 9 graduates in 1967-68 and the latter 4.

b. Bachelors and masters programs in agricultural economics are projected for Fresno. These will be the first for the system. Agricultural economics has long been offered by the Berkeley and Davis campuses of the University. Data show that undergraduate enrollment, especially at Berkeley, has increased substantially in the period 1963 to 1967. Graduate enrollment, however, has not shown the same proportionate expansion.

c. Three programs are in operation in dairy science and/or dairy husbandry. Two enroll some 20 undergraduates each, the third is some three times as large--enrolling 66.

d. Agricultural mechanics is offered by three State Colleges. Two of the programs together produced three baccalaureate degrees in 1967-68, the third graduated 14.

e. Student enrollment in agriculture has not changed substantially in the last four years as is shown below:

Full Time Undergraduate Enrollment:	Fall 1963	Fall 1967
Pomona	495	490
S.L.O.	1,394	1,199
Chico	250	358
Fresno	443	455
	2,582	2,502

In this connection it is noted that some six new baccalaureate programs are proposed, as well as 8 masters degree programs in the State Colleges (there is at present, one.)

The data concerning the University indicate, as well, some items of interest:

a. Programs in agricultural chemistry are offered by Davis and Berkeley. Graduate enrollment totalled 11 in the former program, and 4 in the latter in the fall 1967.

b. Berkeley continues to offer an undergraduate major in agricultural science. Eleven students declared this major in fall 1967.

c. Davis offers a masters degree in poultry science. There were in the fall of 1967, 3 graduate student majors. One degree was awarded in the 1967-68 year.

d. A tabulation of graduate enrollments in selected areas within the agricultural sciences would suggest that enrollments are about 25% greater in University programs in 1967 than in 1962.

Berkeley has seen an increase in the number of undergraduate students in the agricultural sciences in recent years. In 1963, 183 students indicated they were majoring in agricultural subjects, in 1967, 289. Total University-wide agriculture enrollments were 1,118 in the fall of 1963 and 1,534 in fall, 1967. Davis recorded the bulk of the enrollments.

Agriculture, in number of degree programs offered, is somewhat comparable to business administration. A review of this latter subject area does not suggest, as does agriculture, that many programs are provided for a relatively limited group of students. On the contrary, in most instances student enrollment appears to support the need for the several majors offered.

A major study, headquartered at Davis, of agriculture programs focusing primarily on industry needs is presently underway. Results of the survey should be useful in assessing demand for graduates from many agricultural curricula, especially in the State Colleges and Junior Colleges.

The number of individual degree majors, the comparatively limited number of enrollees, and the relatively static situation in enrollments may suggest the need for a major review of agricultural education in California making use, as appropriate, of the results of the abovementioned survey. The role of the Junior Colleges, it must be pointed out, should be included in such a review in view of their major contribution in agricultural education.[1] The review could include, as well, emphasis on the cost of establishing and maintaining agricultural facilities, a subject not previously given close examination on a comprehensive base.

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[1] See for example, CCHE Report 67-6, State College Tech. Curricular in Agriculture, for a discussion of the Junior College programs especially in relation to those of the State Colleges, pp. 23-28.

Home Economics

State College and University programs in home economics and allied subjects are listed in Table II-2. Most undergraduate programs now authorized have substantial enrollments and considerable numbers of baccalaureates are produced.

Data for the year shown suggest that possible study of the graduate programs in home economics may be useful at the State Colleges where two programs, of the existing eight, produced all but one of the masters degrees granted. Such study could take into account the question of establishing additional State College masters level programs (two are now proposed),[1] future expectations for the lower enrollment programs, as well as considering the need being met by existing graduate programs in the University, now largely concentrated on the Davis campus.

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[1] It should be noted that for some years the State Colleges had a moratorium on development of graduate programs.

TABLE II-2
PROGRAMS IN HOME ECONOMICS
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
	Degree Programs[a] 1968	Proposed New Programs (Undergraduate)[b]	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enroll-ment 1967	Degrees Granted 1967-68
STATE COLLEGES:										
Cal Poly - SLO	B	-	1,615	626	99	M	-	30	-	-
Chico	B	-	427	133	29	-	M	-	-	-
Fresno	B	-	1,580	219	66	M	-	108	9	1
Humboldt	B	-	286	56	9	-	-	6	-	-
Long Beach	B	-	1,939	267	67	M	-	165	69	25
Los Angeles	B	-	1,477	206	59	M	-	-	-	-
Pomona										
Foods-Nutrition	B	-	109	35	4	-	-	-	-	-
Home Economics	-	B	-	-	-	-	-	-	-	-
Sacramento	B	-	811	120	41	-	M	47	-	-
San Diego	B	-	1,304	301	70	M	-	68	-	-
San Fernando Valley	B	-	1,505	171	45	M	-	84	18	-
San Francisco	B	-	1,085	107	49	M	-	53	10	-
San Jose	B	-	1,907	358	81	M	-	258	53	21
	(12)	(1)		(2,599)		(8)	(2)		(159)	
UNIVERSITY:										
Davis										
Home Economics	B	-	288	178	45	M	-	45	19	7
Food Science Technology	B	-	349	37(15fds)	11(2fds)	M	-	187	51	16
Nutrition	B	-	455	56	11(diet.)	M,Phd	-	181	39	4,2
Textiles & Clothing	B	-	120	17	3	-	-	20	not reptd.	not reptd.
Berkeley										
Food Science/Nutrition	B	-	not reptd.	6	9	M,PhD	-	-	47	11,8
Santa Barbara										
Home Economics	-	-	-	-	-	M/in Ed.	-	-	-	-
Foods-Nutrition	B	-	518	159	31	-	-	9	5	0
Textiles-Clothing	B	-				-	-	-	-	-
General Home Economics	B	-				-	-	-	-	-
	(8)	(-)		(468)		(5,2)	(-)		(161)	

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a, b - See Table II-1 for notes.

Dramatic Arts

Table II-3 and II-4 summarizes data concerning graduate programs in speech and drama in the State Colleges and University. The tabulation is included as drama is often cited as a costly program because of the facilities required. (See Section I of this report for discussion and comment on Radio and TV in the State Colleges below.)

The listing indicates that nearly all campuses and colleges now offer graduate programs in drama (or the speech-drama combination). Development of additional programs in the dramatic arts--three completely new graduate programs are proposed in the State Colleges and two in the University--might profit from an intersegmental study of the existing programs and their locations, as well as the facilities needed to carry on graduate programs beyond those minimum requirements of a college or university campus to maintain a complete cultural program for the institution's students.

TABLE II-3

GRADUATE PROGRAMS IN SPEECH
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	Upper Division Student Credit Hrs. Fall, 1967	GRADUATE PROGRAMS				
		Degree Programs[a] 1968	Proposed New Programs[b] (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
STATE COLLEGES:						
Hayward--Speech and Drama	772	-	M	-	-	-
Chico--Speech and Drama	821	M	-	30	3	1
Fresno--(including speech correction)	1,349	M	-	153	26	3
Humboldt	143	M	-	30	5	1
Long Beach	3,027	M	-	263	54	9
Los Angeles						
Speech (and speech correction)	not reported	M	-	340	65	10
Speech and Drama		M	-		9	-
Speech Pathology	542	M	-	70	not reported	-
Fullerton	1,073	M	-	171	45	4
Sacramento (including speech correction)	1,594	M	-	142	43	7
San Diego--Speech Arts	2,866	M	-	220	28	16
San Fernando Valley	1,298	M	-	157	35	6
San Francisco	1,468	M	-	260	22	4
San Jose (including speech correction)	898	M	-	176	13	2
Stanislaus (including speech correction)	488	M	-	64	not reported	-
		(14)	(1)		(348)	
UNIVERSITY:						
Berkeley	957	M,PhD	-	136	20	7,0
Davis--(Rhetoric)	239	-	M	-	-	-
Los Angeles	592	M,PhD	-	241	51	12,10
Santa Barbara	682	M	-	128	14	8
		(3)	(1)		(85)	

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a, b See notes, Table II-1

TABLE II-4
GRADUATE PROGRAMS IN DRAMA
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

		GRADUATE PROGRAMS				
	Upper Division Student Credit Hrs. Fall, 1967	Degree Programs[a] 1968	Proposed New Programs[b] (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
STATE COLLEGES:						
Dominguez--Theater Arts	16	-	M	-	-	-
Humboldt--Theater Arts	346	M	-	96	14	1
Long Beach--Theater Arts	935	M	MFA	44	24	3
Los Angeles--	2,466	M	-	not reported	42	9
Fullerton	1,260	M	MFA	78	17	1
Sacramento	460	-	MFA	27	-	-
San Diego	-	-	MFA	-	-	-
San Fernando Valley	1,531	M	-	51	13	7
San Francisco	3,272	M	-	357	63	35
San Jose	1,576	M	-	87	29	8
		(7)	(5)		(202)	
UNIVERSITY:						
Berkeley--(Dramatic Art)	1,333	M, PhD	-	261	68	10, 0
Davis	585	M	MFA,PhD	99	19	4
Irvine	688	-	MFA,PhD	-	-	-
Los Angeles--(Theater Arts)	5,116	M, MFA	-	1,649	282	48
Riverside	233	MFA	-	15	not reported	0
San Diego (courses being developed)	-	-	-	-	-	-
Santa Barbara	769	M, PhD	-	133	28	4,0
		(6,2)	(2,2)		(397)	

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a, b See notes, Table II-1

Law Enforcement and Corrections

The subject area of law enforcement and corrections may well be one in which program expansion at the undergraduate level may be expected as higher levels of training are required for all kinds of law enforcement personnel. The subject area involves all three segments of public higher education. Junior Colleges have offered police science curricula and related subjects for many years.[1] Table II-5 lists the existing programs of the State Colleges and University which fall under this general label.

Possibilities may exist for greater association of occupational-oriented programs of the State Colleges with law schools and social sciences programs as the need for investigation of the subject of law and justice in society becomes increasingly important.

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[1] Some 68 colleges offer police science curricula. The curriculum normally consists of a 27 unit minimum bloc. Some 18,000 students are enrolled in these programs; over 60% have yet to enter police service. Many because of age will enter State Colleges or other work after completing junior college programs. The subject area has recently been under review by the Board of Governors' staff.

TABLE II-5

PROGRAMS CONCERNING LAW ENFORCEMENT AND CORRECTIONS CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
	Degree Programs[a] 1968	Proposed New Programs[b] (Undergraduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
STATE COLLEGES:										
Fresno										
Criminology	B	-	1,053	129	24	M	-	105	13	1
Long Beach										
Criminology	B	-	2,031	196	72	-	M	-	-	-
Los Angeles										
Public Service	-	-	-	-	-	M	-	not reptd.	not reptd.	-
Criminalistics	-	-	-	-	-	M	-	not reptd.	not reptd.	1
Police Science and Administration	B	-	1,980	150	74	-	-	-	-	-
San Diego										
Corrections and Administration	-	-	-	-	-	-	M	-	-	-
Sacramento										
Police Science and Administration	B	-	1,923	214	not reptd.	-	-	-	-	-
Corrections and Administration	B	-			17	-	-	-	-	-
San Jose										
Law Enforcement and Administration	B	-	868	172	45	-	M	-	-	-
Penology	B	-	(incl. in above)	(incl. in above)	-	-	-	-	-	-
	(7)	(-)		(861)		(3)	(3)		13	
UNIVERSITY										
Berkeley										
Criminology	B	-	2,667	99	44	D/Crm M/Crm	-	762	140	9

a,b See notes, Table II-1

Foreign Languages

Tables II-6 to II-10 summarize data concerning foreign language offerings in the State Colleges and the University. Tabulated is information concerning graduate programs in French, Spanish and German, and graduate and undergraduate data for Italian, Russian, Chinese, Japanese, Greek and Latin.

Though the place of language instruction in the collegiate curriculum is not at issue, the data, however, do suggest that the graduate programs in all language areas might be usefully considered as a whole toward assessing the need and location for additional programs. In such an assessment the performances of University programs at the master's level might be useful to State College planners (and in some instances, vice versa). A summary tabulation of majors and degrees, existing and proposed, appears to support the need for study:

	Existing		Proposed		No. of Majors at Grad.Level
	MA	PhD	MA	PhD	
French					
C.S.C.	6	-	4	-	116
U.C.	7	7	-	1	309
Spanish					
C.S.C.	8	-	5	-	189
U.C.	7	6	-	-	229
German					
C.S.C.	4	-	2	-	57
U.C.	7	7	-	-	217
Italian					
C.S.C.	1	-	-	-	not reported
U.C.	3	3	1	-	32
Russian					
C.S.C.	1	-	1	-	not reported
U.C.	4	3	1	-	89
Chinese					
C.S.C.	1	-	-	-	15
U.C.	3	3	-	-	43
Japanese					
C.S.C.	-	-	1	-	-
U.C.	See Chinese and Oriental Lang.				
Greek					
C.S.C.	-	-	-	-	-
U.C.	2	-	1	-	3
Latin					
C.S.C.	-	-	-	-	-
U.C.	2	-	-	-	4

It would appear that there exist a considerable number of graduate programs for proportionately few majors. This is perhaps most true for the State Colleges. (It should be noted that the student major count in these tabulations are for all graduate students. In the State Colleges the majority of graduate majors are attending on a part-time basis, this is seldom so in the University. On the other hand, doctoral, post-master's level students are included in the case of University figures.)

Attention might also be directed to the immediate need to establish new undergraduate programs in the State Colleges, such as: two additional programs in Chinese, one in Japanese, four in Russian and two in Italian. Similarly, the timing for initiation of two programs in Latin--the first for the system--could be examined. Such study could take note of University experience in the offering of similar programs.

Any study, of course, should recognize that degrees granted in languages can be an economical spill-over benefit in that language instruction is typically a "service course." The question should be considered, at what point in language (and literature) instruction does it become excessively costly to provide the full range of offerings necessary to award a degree in the language, as opposed to offering language instruction courses and labs for those students wishing to study the particular language as part of another curriculum.

In addition to the language studies listed in Tables II-6 to II-10, the University offers other language training and cultural programs in a number of other languages. These language studies in some instances (most often at U.C.L.A. and U.C.B.) serve as a degree major; however, in most cases they are offered as portions of other majors or for individual student breadth requirements.

TABLE II-6
GRADUATE PROGRAMS IN FRENCH AND SPANISH
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

FRENCH:

	GRADUATE PROGRAMS				
STATE COLLEGES	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enroll-ment 1967	Degrees Granted 1967-68
Bakersfield	-	-	-	-	-
Chico	-	M	20	-	-
Dominguez Hills	-	-	-	-	-
Fresno	-	-	-	-	-
Fullerton	-	-	48	16	-
Hayward	-	M	-	-	-
Humboldt	-	M	-	-	-
Long Beach	M	-	84	17	1
Los Angeles	M	-	60	21	2
Pomona	-	-	-	-	-
Sacramento	M	-	74	11	-
San Bernardino	-	-	-	-	-
San Diego	M	-	not reptd.	4	3
S.F. Valley	M	-	51	10	-
San Francisco	M	-	146	22	15
San Jose	-	-	116	15	4
S.L.O.	-	-	-	-	-
Sonoma	-	M	-	-	-
Stanislaus	-	-	-	-	-
	(6)	(4)		(116)	
UNIVERSITY					
Berkeley	M,PhD	-	1,071	93	22,0
Davis	M,PhD	-	128	24	7,0
Irvine	M,PhD	-	100	16	1,0
Los Angeles	M,PhD	-	1,627	117	18,3 (7CP)
Riverside	M,PhD	-	52	10	3,0
San Diego	PhD(Lit.)	-	-	-	-
San Francisco	-	-	-	-	-
Santa Barbara	M,PhD	-	208	49	9,0
Santa Cruz	M,PhD	(Lang./Lit.)	-	-	-
	(7,7)	(1)		(309)	

SPANISH:

	GRADUATE PROGRAMS				
STATE COLLEGES	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enroll-ment 1967	Degrees Granted 1967-68
Bakersfield	-	-	-	-	-
Chico	-	M	18	-	-
Dominguez H.	-	M	-	-	-
Fresno	-	-	-	-	-
Fullerton	M/Frgn.Lng.	-	108	27	-
Hayward	-	M	-	-	-
Humboldt	-	M	-	-	-
Long Beach	M	-	111	11	0
Los Angeles	M	-	184	42	5
Pomona	-	-	-	-	-
Sacramento	M	-	34	8	1
San Bernardino	-	-	-	-	-
San Diego	M	-	not reptd.	11	11
S.F. Valley	M	-	123	22	0
San Francisco	M	-	234	43	6
San Jose	M/Frgn.Lng.	-	114	25	3
S.L.O.	-	-	-	-	-
Sonoma	-	M	-	-	-
Stanislaus	-	-	54	-	-
	(8)	(5)		(189)	
UNIVERSITY					
Berkeley	M	-	302	36	9
Davis	M,PhD	-	121	16	2,0
Irvine	M,PhD	-	116	15	0,0
Los Angeles	M	-	822	103	27
Riverside	M.PhD	-	190	34	2,0
San Diego	PhD(Lit.)	-	-	-	-
San Francisco	-	-	-	-	-
Santa Barbara	M,PhD	-	121	25	2,0
Santa Cruz	M,PhD	(Lang./Lit.)	-	-	-
	(7,5)	(-)		(229)	

TABLE II-7
GRADUATE PROGRAMS IN GERMAN
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	GRADUATE PROGRAMS				
STATE COLLEGES	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enroll-ment 1967	Degrees Granted 1967-68
Bakersfield	-	-	-	-	-
Chico	-	M	4	-	-
Dominguez Hills	-	-	-	-	-
Fresno	-	-	-	-	-
Fullerton	-	-	39	14	-
Hayward	-	-	-	-	-
Humboldt	-	-	-	-	-
Long Beach	M	-	-	-	-
Los Angeles	-	-	-	-	-
Pomona	-	-	-	-	-
Sacramento	M	-	47	11	0
San Bernardino	-	-	-	-	-
San Diego	M	-	-	5	7
San Fernando Valley	-	M	-	-	-
San Francisco	M	-	87	15	2
San Jose	-	-	89	12	-
San Luis Obispo	-	-	-	-	-
Sonoma	-	-	-	-	-
Stanislaus	-	-	-	-	-
	(4)	(2)		(57)	
UNIVERSITY					
Berkeley	M,PhD	-	937	90	13,4
Davis	M,PhD	-	392	25	6,0
Irvine	M	-	88	13	5
Los Angeles	M	(PhDGer.L.)	323	56	12
Riverside	M,PhD	-	88	12	4,0
San Diego	PhD (Lit.)	-	-	-	-
San Francisco	-	-	-	-	-
Santa Barbara	M,PhD	-	89	21	7,1
Santa Cruz	M,PhD (Lang.& Lit.)		not reptd.	not reptd.	0,0
	(7,7)	(-)		(217)	

TABLE II-8
PROGRAMS IN ITALIAN AND RUSSIAN
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
	Degree Programs[a] 1968	Proposed New Programs[b] (Undergraduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enroll-ment 1967	Degrees Granted 1967-68
ITALIAN										
STATE COLLEGES										
San Francisco	B	-	56	11	8	M	-	60	not reptd.	0
San Diego	-	B	-	-	-	-	-	-	-	-
Sonoma	-	B	-	-	-	-	-	-	-	-
	(1)	(2)		(11)		(1)				
UNIVERSITY										
Berkeley	B	-	432	18	11	M,PhD	-	221	16	5,0
Davis	B	-	15	not reptd.	0	-	M	-	-	-
Los Angeles	B	-	392	34	11	M,PhD	-	212	16	3,0
Santa Barbara	B	-	286	not reptd.	6	-	-	-	-	-
Santa Cruz	B	-	-	-	-	M,PhD(Lang.d.Lit.)	-	-	-	-
	(5)	(-)		(52)		(3,3)	(1)		(32)	
RUSSIAN										
STATE COLLEGES										
Fresno	B	-	45	3	4	-	-	-	-	-
Fullerton	-	B	54	-	-	-	-	-	-	-
Hayward	-	B	4	-	-	-	-	-	-	-
Humboldt	-	-	26	-	-	-	-	-	-	-
Los Angeles	-	B	15	-	-	-	-	-	-	-
Sacramento	-	B	12	-	-	-	-	-	-	-
San Diego	B	-	not reptd.	18	8	-	M	-	-	-
San Fernando Valley	B	-	159	17	9	-	-	-	-	-
San Francisco	B	-	237	22	6	M	-	78	not reptd.	0
San Jose	B	-	73	4	2	-	-	26	-	-
Sonoma	-	B	-	-	-	-	-	-	-	-
	(5)	(5)		(64)		(1)	(1)		(-)	

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a, b See notes, Table II-1

(Continued on next page)

TABLE II-8(CONTINUED)

PROGRAMS IN ITALIAN AND RUSSIAN
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
	Degree Programs 1968	Proposed New Programs (Under-graduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enroll-ment 1967	Degrees Granted 1967-68
RUSSIAN										
UNIVERSITY										
Berkeley (Slav. Language and Literature)	B	-	1,010	43	19	M,PhD	-	282	46	4,0
Davis	-	-	52	3	2	M	-	not reptd.	not reptd.	-
Los Angeles (Slav. Language & Literature	B	-	410	44	17	M,PhD	-	188	43	11,1
Riverside	B	-	292	14	4	-	M	-	-	-
Santa Barbara	B	-	194	8	1	-	-	-	-	-
Santa Cruz	B	-	105	-	not reptd.	M,PhD (Lang.d.Lit.)	-	not reptd.	not reptd.	-
	(5)	(-)		(112)		(4,3)	(1)		(89)	

TABLE II-9
PROGRAMS IN CHINESE AND JAPANESE
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
	Degree Programs[a] 1968	Proposed New Programs[b] (Undergraduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
CHINESE										
STATE COLLEGES										
Dominguez Hills	-	B	-	-	-	-	-	-	-	-
Los Angeles	-	B	-	-	-	-	-	-	-	-
San Francisco	B	-	192	22	7	M	-	65	15	0
	(1)	(2)		(22)		(1)	(-)		(15)	
UNIVERSITY										
Berkeley										
Oriental Lang.	B	-	711	32	10	M,PhD	-	99	24	2,1
Davis	-	-	122	-	-	-	-	-	-	-
Los Angeles										
Oriental Lang.	B	-	824	37	7	M,PhD	-	88	19	1,0
Santa Barbara										
(Minor subj.)	-	-	119	-	-	-	-	-	-	-
Santa Cruz										
(Lang. & Lit.)	B	-	not reptd.	not reptd.	-	M,PhD	-	not reptd.	-	-
	(3)	(-)		(69)		(3,3)	(-)		(43)	
JAPANESE										
STATE COLLEGES										
Los Angeles	-	B	40	-	-	-	-	-	-	-
San Francisco	B	-	69	5	4	-	M	-	-	-
San Jose	-	-	48	-	-	-	-	-	-	-
	(1)	(1)		(5)		(-)	(1)		(0)	
UNIVERSITY										
See Chinese & Oriental Lang.										

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a, b See notes, Table II-1.

TABLE II-10
PROGRAMS IN GREEK AND LATIN
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
	Degree Programs[a] 1968	Proposed New Programs[b] (Undergraduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
GREEK										
STATE COLLEGES										
No programs reported or proposed. (San Francisco reports 33, U.D.SCH; San Diego 27)										
UNIVERSITY										
Berkeley	B	—	267	7	4	M	—	Not reported	3	1
Irvine	B	—	108	6(classics)	1	-	—	-	-	-
Los Angeles	B	—	68	1	Not reported	M	—	31	-	Not reported
Riverside	B	—	8	1	Not reported	-	—	-	-	-
Santa Barbara	B	—	34	Not reported	Not reported	-	—	-	-	-
Santa Cruz		—	15							
(Option, Classics-Language and Literature B,M,PhD offered)										
Davis (Classics) (Greek-Latin-Sanskrit)	B		25	2	Not reported	-	M	-	-	-
	(6)	(-)		(17)		(2)	(1)		(3)	
LATIN										
STATE COLLEGES										
Sacramento	—	B	36	-	-	-	—	-	-	-
San Jose	—	B	15	-	-	-	—	-	-	-
UNIVERSITY										
Berkeley	B	—	268	9	3	M	—	309	2	5
Davis(Classics)	B	—	38	3	Not reported	-	M	—	-	-
Irvine	B	—	56	3	1	-	—	-	-	-
Los Angeles	B	—	68	8	3	M	—	65	2	1
Riverside	B	—	50	3	2	-	—	-	-	-
Santa Cruz										
(Option, Classics-Language and Literature B,M,Phd)										
Santa Barbara	B	—	48	8	Not reported	-	—	-	-	-
	(6)	(-)		(34)		(2)	(-)		(4)	

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a, b See notes, Table II-1.

Anthropology

Anthropology is a traditionally recognized subject area offered in nearly all colleges and universities at the undergraduate level, generally within specific degree programs. Similarly, most universities offer graduate programs, many leading to the Ph.D. Table II-11 summarizes the graduate programs existing and planned in the State Colleges and University. The data suggest that the planning of new graduate programs should proceed carefully for it is noted that all programs save those of Berkeley and U.C.L.A. within the University and San Francisco in the State College system have comparatively modest enrollments and limited degree output. Further, graduate anthropology often involves extensive field experience thus involving considerable financial commitment for a quality program.

TABLE II-11
GRADUATE PROGRAMS IN ANTHROPOLOGY
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
STATE COLLEGES:	~~Degree Programs 1968~~	~~Proposed New Programs (Undergraduate)~~	Upper Division Student Credit Hours Fall, 1967	~~Full-time Major Enrollment Fall, 1967~~	~~Degrees Granted 1967-68~~	Degree Programs[a] 1968	Proposed New Programs[b] (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
Chico	--		801		--	-	M	-	-	-
Fullerton	--		1,248		--	-	M	18	-	-
Hayward	--		2,028		--	-	M	-	-	-
Long Beach	--		3,249		--	M	-	-	-	-
Los Angeles	--		2,084		--	M	-	15	not reptd.	not reptd.
Sacramento	--		2,881		--	M	-	56	29	0
San Diego	--		2,059		--	M	-	97	16	2
San Fernando Valley	--		3,046		--	M	-	58	6	0
San Francisco	--		3,255		--	M	-	not reptd.	not reptd.	not reptd.
						M	-	125	42	10
						(6)	(3)		(93)	
UNIVERSITY:										
Berkeley	--		9,057		--	M,PhD	-	1,062	140	30,19
Davis	--		924		--	M,PhD	-	294	60	11,1
Irvine	--		116		--	-	-	36	3	-
Los Angeles	--		4,678		--	M,PhD	-	684	162	24,7
Riverside	--		729		--	M,PhD	-	23	8	0,0
San Diego	--		-		--	-	-	-	-	-
Santa Barbara	--		6,304		--	M,PhD	-	72	24	9,1
Santa Cruz	--		615		--	-	-	-	-	-
						(5,5)	(-)		(397)	

[a,b] See notes Table II-1.

Graduate Geology

Table II-12 presents data concerning undergraduate and graduate programs in geology in the two, four-year systems. All colleges, or nearly all, may be expected to offer some introductory courses in geology to meet the general education and breadth requirements for students. Baccalaureate programs may be offered, in great measure, based on the resources required to operate the service courses in geology.[1] Presumably this rationale does not exist for graduate programs, with such programs based upon needs of industry, education, research, and government service.

As a subject area for graduate study geology and geological sciences appears to have undergone only a modest increase in interest among students in the past few years. In fall 1963, University graduate student majors numbered 161, in fall 1967 the number was 195. In the State Colleges enrollments were 23 in two programs in 1963, and in 1967, 36 in the same two with Fresno authorized to take students in 1968-69 (32 of these students were part-time). Proposals to establish three additional master's programs in the State Colleges in light of the existing State College and University programs may warrant study.

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[1] Though the point at which it is uneconomical to offer a degree program based on service course needs may be open to examination.

TABLE II-12
PROGRAMS IN GEOLOGY
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

	UNDERGRADUATE PROGRAMS					GRADUATE PROGRAMS				
	Degree Programs 1968[a]	Proposed New Programs[b] (Undergraduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Major Enrollment Fall, 1967	Degrees Granted 1967-68	Degree Programs 1968	Proposed New Programs (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enrollment 1967	Degrees Granted 1967-68
STATE COLLEGES:										
Chico	B	-	117	6	0	-	-	-	-	-
Fresno	B	-	389	45	15	M	-	not reptd.	not reptd.	not reptd.
Humboldt	B	-	186	16	1	-	-	-	-	-
Long Beach	B	-	421	37	4	-	M	-	-	-
Los Angeles	B	-	339	39	10	-	M	-	-	-
Sacramento	B	-	167	not reptd.	not reptd.	-	-	-	-	-
San Bernardino	-	B	-	-	-	-	-	-	-	-
San Diego	B	-	527	96	18	M	-	53	8	8
San Fernando Valley	B	-	343	42	7	-	M	-	-	-
San Francisco	B	-	536	20	8	-	-	22	-	-
San Jose	B	-	905	58	13	M	-	99	28	5
Sonoma	-	B	117	6	0	-	-	-	-	-
	(10)	(2)		(365)		(3)	(3)		(36)	
UNIVERSITY:										
Berkeley	B	-	341	40	15	M,PhD	-	435	63	3,7
Davis	B	-	469	35	4	M,PhD	-	59	11	4,0
Los Angeles	B	-	440	58	11	M,PhD	-	278	66	15,2
Riverside	B	-	137	22	5	(Geo.Sci.)M,PhD	-	151	28(Geo.Sci.)	6,0
San Diego	-	-	-	49(Earth Sci.)	-	-	-	-	-	-
Santa Barbara	B	-	199	37	6	M,PhD	-	157	27	4,2
Santa Cruz	B	-	5	not reptd.	0	M,PhD	-	not reptd.	not reptd.	0,0
	(6)	(-)		(241)		(6,6)	(-)		(195)	

[a,b] See notes, Table II-1

Graduate Physics

Table II-13 summarizing data for graduate programs existing and proposed in physics suggests the importance in academic planning of assessing programs in terms of student demand as well as manpower needs. The State Colleges at present offer some eight master's level programs and five more are proposed in the academic plan. The University offers seven master's and doctoral programs, with one additional program being proposed at Santa Cruz. In recent years student interest in physics has been relatively stable.[1] Totals of student majors in the State Colleges and University reflect this:

Graduate Major Enrollments	Fall 1963	Fall 1967
C.S.C.	228	219
U.C.	809	936

It should be pointed out in considering these totals that nearly all of the State College enrollments are part-time--189 of the 219 in fall 1967. This pattern has continued over the years.

Study may well be called for to consider the need for additional graduate programs in physics in terms of student interest. Existing programs may prove sufficient.

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[1] Nationally, the number of BS degrees in physics peaked in 1962. By 1966, degree production had declined by a modest amount to a level equal to that of 1960. In the same period, of course, student enrollments in higher education increased substantially. See F. E. Terman, A Study of Engineering Education in California, March 1968., p. 6, Fig. 1.

TABLE II-13
GRADUATE PROGRAMS IN PHYSICS
CALIFORNIA STATE COLLEGES AND UNIVERSITY OF CALIFORNIA

						GRADUATE PROGRAMS				
	~~Degree Programs 1968~~	~~Proposed New Programs (Undergraduate)~~	Upper Division Student Credit Hours Fall, 1967	~~Full-time Major Enrollment Fall, 1967~~	~~Degrees Granted 1967-68~~	Degree Programs[a] 1968	Proposed New Programs[b] (Graduate)	Graduate Student Credit Hours Fall, 1967	Graduate Major Enroll-ment 1967	Degrees Granted 1967-68
STATE COLLEGES:										
Chico	-		141	-		-	M	3	-	-
Dominguez Hills	-		not reptd.	-		-	M	-	-	-
Fresno	-		164	-		M	-	59	7	5
Fullerton	-		174	-		-	M	12	-	-
Hayward	-		201	-		M	-	not reptd.	not reptd.	not reptd.
Long Beach	-		892	-		M	MAT	162	40	7
Los Angeles	-		381	-		M	-	175	35	3
Sacramento	-		247	-		-	M	40	-	-
San Diego	-		1,259	-		M	-	296	33	16
San Jose	-		693	-		M	-	253	70	18
San Fernando Valley	-		401	-		M	-	78	23	5
San Francisco	-		239	-		M	-	87	11	8
Sonoma	-		31	-		-	M	-	-	-
						(8)	(5 new)		(219)	
UNIVERSITY:										
Berkeley	-		2,419	-		M,PhD	-	2,734	344	17,56
Davis	-		367	-		M,PhD	-	283	40	5,2
Irvine	-		292	-		M,PhD	-	400	45	1,0
Los Angeles	-		2,056	-		M,MAT,PhD	-	1,497	187	25,15
Riverside	-		597	-		M,PhD	-	1,021	112	9,9
San Diego	-		649	-		M,PhD	-	1,246	155	21,19
Santa Barbara	-		283	-		M,PhD	-	403	53	7,4
Santa Cruz			40	-		-	M,PhD	-	1	-
						(7,7)	(1,1)		(936)	

[a,b] See notes, Table II-1.

Area Studies

Recent years have seen the development of curricula which can be classed under the general heading "area studies." These area studies most recently have included not only concentration on the geography, culture, language, politics, and sociology of areas of the world outside the United States, but now in some instances include "American Studies" and Black and Brown study programs of various kinds.

The academic plans and the educational program survey indicate the following programs for the University:

Asian Studies - UCB--M, PhD
SB-B

American Studies - Davis-Proposed
Irvine-B

African Studies - LA-B

African Area Studies - LA-B

Latin American Studies - UCB--PhD
LA--B, M

Indo-European Studies - LA-B, PhD

Near Eastern Studies - LA-B

Russian Area Studies - SB-B

The Plans of the State Colleges are shown in Table II-14.

The variety of programs listed suggests that differing mixes of resources--faculty, library, language training--are called for depending on the area or cultural study involved. Further, the objectives of one program may be quite different from another. There is little doubt that such curricula will continue to develop and that they will find students interested in taking courses within the curricula.

In view of the likelihood of expanding demands, study appears called for as soon as possible to ensure the orderly development of such programs, perhaps on a regional basis, at both the graduate and undergraduate levels. Such study should take into account Junior College programs especially in the ethnic studies grouping. In addition, such study may assist the systems, especially the State Colleges and Junior Colleges, in differentiating the different kinds of ethnic and area studies as they vary in their objectives.

In addition to the foregoing compilations of findings concerning selected University and State College programs, other subject areas in each system may be noted for attention.

TABLE II-14

AREA STUDIES; C.S.C.
(Existing and Projected Degrees)

	LOS ANGELES AREA						SAN FRANCISCO AREA					OTHER AREAS						CAL POLY	
PROGRAMS	Los Angeles	Dominguez Hills	Long Beach	San Fernando Valley	Fullerton	San Bernardino	San Francisco	San Jose	Hayward	Sonoma	Sacramento	San Diego	Bakersfield	Fresno	Stanislaus	Chico	Humboldt	Pomona KV	San Luis Obispo
African Studies					BA 72														
Afro-American Studies												BA 68							
American Studies	BA MA	MA 71			BA 68	BA 70	BA MA 71	BA 70				MA 69			BA 72	BA			
Asian Studies										BA 69		BA MA 72		MA 70			BA		
Black Studies							BA 69												
Chinese Studies							BA MA 71												
European Studies										BA 70		BA							
Latin American Studies	BA MA			MA 69	BA 70	BA 71	BA MA 71		BA		BA 69	BA MA		BA		BA 70			
Russian Studies					BA 69														
Slavic Area Studies											BA 72								
Soviet Studies												BA 68							

In addition to the foregoing compilations of findings concerning selected University and State College programs, other subject areas in each system may be noted for attention.

Graduate Administration Programs (U.C.)

Irvine at present is authorized to award masters and doctorates in administration. Davis, Riverside and Santa Barbara have been authorized, but not yet funded to offer similar programs. Santa Cruz has a program plan under discussion at the campus level. In fall 1967 Irvine enrolled 11 graduate student majors and awarded 5 masters degrees in 1967-68.

The area has recently been the subject of a major University review in that it involves a departure from more traditional approaches wherein business, and public administration (and educational administration) are viewed as more or less separate programs or disciplines. While the four programs will doubtless be attractive to students, some pacing of the development of programs may be called for as experience is gained in the offering of such consolidated programs and success in placing graduates recorded.

Radio and T.V. (C.S.C.)

The survey disclosed the following concerning Radio and T.V. programs presently offered and planned in the State Colleges:

	UNDERGRADUATE PROGRAMS				
	Number of Degree Programs 1968	Proposed New Programs (Undergraduate)	Upper Division Student Credit Hours Fall, 1967	Full-time Enrollment Fall, 1967	Degrees Granted 1967-68
Fresno	1	-	338	18	7
Humboldt	1	-	64	10	2
Long Beach	1	-	not reptd.	24	14
Los Angeles	1	-	167	-	5
Sacramento	-	1[a]	170	-	-
San Diego	1	-	not reptd.	119	28
San Fernando Valley	1	-	not reptd.	51	13
San Francisco	1	-	3,523	255	71
San Jose	1	-	not reptd.	44	13
	8	1		521	153

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[a] Degree authorization no earlier than 1968.

The listing indicates that four of the eight existing programs enrolled less than 25 students in the fall of 1967 and that an additional baccalaureate program is planned at Sacramento State College.

At the present there is one graduate program. This program at San Francisco, which it is noted had the largest undergraduate program, generated 417 SCH, enrolled 80 full and part-time student majors, and graduated four persons with master's degrees in the 1967-68 period. The academic plan indicates three new proposed programs at the graduate level to be located at San Fernando Valley, San Diego and Sacramento State Colleges, respectively.

The State Colleges may wish to examine the timing for the organization of the three proposed graduate programs as well as the growth potential of existing undergraduate programs. Such examination could pay particular attention to the facility requirements for operation of both undergraduate and graduate offerings in Radio, T.V. and film-making.

Art and Music

Nearly all State Colleges now offer programs in art and music at both the graduate and undergraduate level. These programs are part of the State College foundation program and have been determined essential to development of each State College. Review of the academic plan indicates that many State Colleges propose additional master's degrees to those now offered, a Master of Fine Arts in the case of art and a Master's of Music in music. At the present time the Office of the Chancellor is studying the related subjects of the creative arts. As a part of that study, the implications these new degree programs will have in terms of facilities required and student-faculty contact could be explored.

Religious Studies

Some years ago the Santa Barbara campus of the University established a program in religious studies which now includes a bachelor's and a master's degree program. An Institute for Religious Studies has also been established on the campus. In 1967-68, some 15 bachelors were awarded and no master's degrees (there were nine graduate majors in the fall 1967).

The academic plans of the State Colleges indicate that five State Colleges plan to institute baccalaureate programs:

Long Beach	1972
Fullerton	1969
San Diego	1969
Bakersfield	1974
Fresno	1971

As this program is a relatively new one, especially to public institutions, study by the State Colleges appears called for to assure that too many programs are not established too soon. The University might be called upon for its experience with the Santa Barbara program. The question of the additional resources needed by State Colleges in respect to faculty and library could be considered in such study.

C. The State of Academic Planning

The two most recent academic plans for the California State Colleges and the University of California[1] are the most complete and comprehensive academic plans yet prepared by the two segments. Both are extremely useful documents both to the systems themselves, as well as to bodies such as the Council. In themselves they are useful reference documents for anyone interested in the activities and plans of the several colleges and campuses of the system.

The State College document in format is perhaps the more informative and usable, in that it lays out more explicitly the proposed new programs by college and by subject, as well as the dates when the programs may be initiated. The University document, though titled as a ten-year plan, is not precisely that, at least in its method of presenting new program plans. The status of new programs and possible dates for installation are not as clearly stated as in the State College plan. In any event an academic plan is a "best estimate" of what will occur reflecting in some measure hopes and desires. For this reason a plan is subject to continual revision.

In great measure, the two academic plans have served as the key element in the foregoing review of selected programs. There are, however, some additional points which may be noted which are included in, or suggested by, a reading of the plans. Some of these are summarized in the paragraphs below.

The University Academic Plan

1. The University Plan, at the outset, usefully reviews present admissions standards and related matters. In this context it should be noted that the University Regents are now considering (submitted at the March 1969 meeting) the possibilities of meeting the 60% upper division and 40% lower division student distribution by 1975 as called for in the Council's interpretation of Master Plan agreements. The matter was explored in a report to the Council in March 1969 focusing on the undergraduate student leading to recommendation for close study of this question. The outcome of the policy review will have implications for University academic planning as well as that of the State Colleges and the Junior Colleges. It is assumed the Council will wish to work closely with the University, as well as the other segments, in considering this subject which has major cost and educational implications.

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[1] Academic Plan, University of California, 1968-69 - 1977-78, approved in principle by the Regents, January 17, 1969, and Academic Master Planning in the California State Colleges, 1968-69 Through 1972-73, November 1968, submitted to the Trustees, January, 1969.

2. The results of the University's study of postdoctoral students reported in the Plan (p. 20-21) may be of interest to the Council and to private universities in California with similar scholars on their campuses. The Council may wish to make comment in the future on the need for State budget recognition for such kinds of students after fully considering the matter.

3. The Plan (p. 28) states:

> Except for the San Francisco Medical Center campus, every campus of the University includes or will eventually include undergraduate, graduate, and professional programs of instruction, and research activities related to these programs, in a wide variety of subject matter fields. This is basic to the concept of a general University campus, which is expected to serve a wide variety of student needs and interests . . . The presence of a variety of subject fields on each campus is desirable also because the fields themselves need opportunities for interaction in order to remain dynamic.

The concept of the general university campus is yet to be explicitly defined. It continues to be uncertain as to which programs are necessary on the developing and smaller campuses in order to fulfill the objectives of the general campus. It is noted that effort is made in the Plan to point out that in professional programs and graduate programs (especially those requiring special facilities) certain criteria are used in reviewing proposals. These criteria are of a different order than those for undergraduate programs and focus in part on demand for programs.

4. Concerning engineering (p. 31) the University Plan takes note of the recent study for the Council prepared by Frederick Terman. The document indicates that development of the Riverside and Santa Cruz programs is being delayed pending a University-wide academic plan for engineering. The Plan states in conclusion:

> However, the University believes that, for reasons of educational policy, it will be essential to have the discipline of engineering or applied science available in some form, eventually, to students on every general campus of the University.

5. Programs in environmental design are discussed (p. 32) with certain University studies mentioned. The Council's consultant study should be of assistance to the University in its planning. Existence of this study is not noted in the Plan.

6. The Plan (p. 32) indicates the possibility of at least one new school of law being required in the next decade with stress being placed on the Santa Barbara campus. Under present procedures, establishment of such a school would be referred to the Council for comment. Other law school proposals are noted in items 9, 11 and 13.

7. The description of the Davis program (p. 40) indicates that a school of dentistry is under campus consideration. The subject of dental education was a subject of a Council report in 1964. Establishment of such a school would be in agreement with the report's recommendations calling for a dental school in conjunction with medical schools.

8. The document (p. 40) makes reference to the possible development of a joint doctorate with Chico State in Botany. The question of the joint doctorate is presently under Council staff study for report in fall 1969.

9. The description for Irvine (p. 41) indicates that faculty committees are at work planning for the possible establishment of a School of Law and a School of Architecture and Environmental Planning.

Similarly, Riverside (p. 48) indicates its campus consideration of a School of Architecture. It has already submitted a proposal for a Law School of the President of the University. The Council study of programs in environmental design may be useful to the two campuses in their planning. A School of Social Welfare is also under campus consideration and a proposal for a School of Veterinary Medicine is reported as having been forwarded to the President's office.

10. Enrollment at the University campus at Riverside remains relatively modest considering its 15 years of operation: In fall 1968 it enrolled 4,563 including 1,151 graduate students. The year before the total was 4,034, including 1,039 graduates. While the campus has experienced a steady growth, its expansion has not been dramatic in comparison with some other campuses and colleges in California. The Council may wish to be advised of University studies analyzing Riverside's growth expectations with particular reference to its status as a general university campus and the implications this status implies concerning the establishment of professional schools such as the four listed in the current academic plan (item.9 above).

11. The plan for San Diego (p. 51) lists architecture and environmental planning, dentistry, and law as among those fields under consideration at the campus level. The dentistry school would be in agreement with past Council action (item 7 above).

12. The San Francisco campus (p. 52-3) is the only "non-general" campus in the University system (excluding specialized research centers). Its concentration has been upon the health sciences, though it has been recognized by the Regents that "an expanded program in disciplines relevant to the health sciences [will] be developed in existing or new graduate departments or schools at the Medical Center. . . ." (p. 52). The Plan indicates that the following teaching programs are under campus consideration:

Developmental Biology
Genetics
School of Biological Sciences
Mathematics and Information Sciences
Metabolic, Nutritional, Endocrine Diseases

Concern has been expressed by members of the Council in the past regarding the School of Biological Sciences and its implications. Similarly, questions may be raised about the way in which the mathematics and information sciences program will be limited to health science concerns. It is also noted that degree programs in sociology leading to master's and doctorates are offered.

13. Santa Barbara has prepared proposals for new programs in the following areas (p. 56).

Architecture and City and Regional Planning
Law
School of Library and Information Science
Aeronautical Engineering
College of Interdisciplinary Studies (under campus consideration)
Oceanography

Architecture, oceanography and engineering have been, or soon will be, subjects for Council action. It is noted that the San Diego plans indicate development of a program in librarianship and that recently U.C.L.A. has developed a proposal to offer the Ph.D. in the library and information science area.

14. Table 5, p. 68, recapitulates existing, approved and contemplated professional programs. This is a useful reference in surveying such programs when a particular area is of concern.

15. In its section on innovative programs, the University notes its efforts to design facilities so they may be adapted to the technological developments in learning devices (p. 72). The need for compatibility among campuses is noted. It is apparent, as well, that compatible design, equipment and planning in this area, such as computer installations and T.V. equipment would be desirable on an inter-segmental basis, possibly by region. Council, University, State College, Junior College, and perhaps independent college and university staffs could be directed to make a concerted effort to focus planning in this subject.

California State Colleges

1. There are several general observations which may be made in reading the State College academic plan:

   a. The plan according to introductory statements, deadlines established, and notations throughout the report has explicitly built into it the Council's 1966 procedures for review of new programs and, as well, notation as to reports under Council sponsorship which bear on individual degree programs.

   b. The Trustees have by formal action approved the five-year charts for each college and the degrees proposed therein. The document then is very much a five-year plan, presumably subject to change only under extraordinary circumstances, especially for the older colleges.

   c. The State Colleges have been engaged for some years in establishing uniform program terminologies--at least in data collection systems--within broad subject areas. This effort has been most worthwhile and has resulted in the State Colleges being able to produce data for this present program survey in a most usable form, as well as to present comprehensive chartings of programs at 19 colleges.

2. Special studies are reported in the plan being underway in creative arts, social work, and industrial arts and technology. Possibilities may exist for other studies taking into account the University and Junior Colleges, as appropriate, to be conducted simultaneously to supplement the State College studies. Consultation with the Council staff concerning individual segment study plans could result in perhaps less duplication of effort over the years ahead as well as more comprehensive reviews or series of reviews being made available.

The need for inter-segmental studies in drama have been suggested in this report. There is much evidence to support the benefit of a comprehensive review of training programs in the technologies, both two and four-year and the articulation between them. Social work programs span both public four-year segments as well as the independent institutions. Assistantship type programs are now developing in the junior colleges. There would appear much to commend joint efforts among the segments perhaps with Council sponsorship in examining these study areas.

3. According to the Council's 1966 procedures (see Appendix G for full text) for review of new programs the State Colleges are to refer--

> An additional program which has an instructional, research or public service function, and which has no functional counterpart within the segment.

The procedures also call for reference of certain programs, mostly graduate, with functional counterparts but not included in the foundation program. The provision is as follows:

> 5 (cl) is identified by the California State Colleges as an organized research activity or as an additional program which in the California State Colleges leads to a master's degree in a field not included in the list of broad foundation studies identified for all State Colleges by the Board of Trustees on March 8, 1963, or which leads to a baccalaureate or master's degree in the field of Agriculture, Criminology, Engineering, Forestry, Library Science, Nursing and Social Welfare, or[1]

A survey of the degree program summaries beginning on page 106 of the academic plan suggests on initial examination at least the following programs potentially falling under the above mentioned provisions of the Council procedures:

Agricultural chemistry	Fresno, MS 1971	No functional counterpart
Agricultural economics	Fresno, BS 1970; MS 1972	No functional counterpart
Animal Technology	S.L.O., BS 1972	No functional counterpart
Food Science	Fresno, BS 1970; MS 1972	No functional counterpart
International Ag.	S.L.O., MIA, 1969 Program at bachelor's level exists at Pomona. The specialized degree program at S.L.O. even though agriculture as such is offered suggests this is a graduate program which comes under the spirit of the procedures.	
Architecture	Pomona, BArch 1970	Program beyond foundation studies
Landscape Arch.	Pomona, MS 1969 S.L.O., BS 1970; MS 1972 (Pomona currently has BS program)	" " "
Area Studies	Several of the new area and ethnic studies programs may be interpreted as having no functional counterpart and as not being within the State Colleges' foundation studies.	

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[1] Paragraph 5 (cl) above should be interpreted to include only those programs leading to a bachelor's degree in Architecture or to a baccalaureate or master's degree in the fields of: Agriculture, Criminology, Engineering, Forestry, Library Science, Nursing and Social Welfare which are proposed for a State College which has no existing programs in these respective fields. [It is the Council staff's opinion this interpretation applies to the last clause of the paragraph and is not meant to limit Council review only to those subjects enumerated.]

Operations Research	L.A., MS 1968 Long Beach, MS 1970	While within the area of bus. ad. (a foundation study), there is no functional counterpart as such.
Home Economics	Sacramento, MA 1972 Chico, MS 1971	Master's programs in area not included in foundation studies.
Industrial Tech.	Long Beach, MS 1972 Fresno, MS 1978 Chico, MS 1972 S.L.O., MS 1971	Master's program in area not included in foundation studies.
Library Science	Fullerton, MS 1970	Master's program in area not included in foundation studies.
Environmental Resources	Sacramento, MS 1970	Master's program in area not included in foundation studies.
Natural Resources	Humboldt, MS 1970	Master's program in area not included in foundation studies.
Oceanography	Humboldt, MS 1970	Master's program in area not included in foundation study. (Now under Council study.)
Water Resources Management	Pomona, BS 1970	No functional counterpart
Nursing	L.A., MS 1969 Long Beach, MS 1970 S.F., MS 1972 Chico, MS 1970	Master's programs in area not included in foundation studies. (Programs in effect approved in Council report, 1966.)

Assuming continuance of existing procedures, the Council would receive information relative to each of these programs in due course.

4. Joint doctoral programs are summarized in the Plan (p. 146). The Council staff is presently studying the development of additional programs as an outgrowth of the recent Benezet study on faculty research.

5. The State College Plan discussion, "Systemwide Analysis of Academic Master Planning," presents a useful review of summary statistics and comments on academic planning in general. (See esp. pp. 155-63.) Council members may find reference to it of value.

SECTION III

SUMMARY AND CONCLUSIONS

Higher Cost Programs

HR 376 directs the Council to undertake a study of "highly expensive, specialized, limited-use academic programs and facilities, with the objective of concentrating such programs and facilities at strategic locations in the public segments of higher education in California and thereby effecting a reduction in total state expense."

Review of available data on a cost-per-student basis (primarily 1954 California and Western Conference Study and the 1963 California Cost and Statistical Analysis) suggests that while capital construction costs and supporting costs such as library and administration are important, the chief determinant of high cost programs are those costs associated with instruction. Thus size of class and the efficiency in the use of professional staff may be of greatest importance in considering which is the more costly program and which is not. However, complete assignment of all costs, capital and supporting, of both a direct and indirect nature may modify this conclusion.

To consider fully the question of the "highly expensive", "specialized", "limited-use" academic programs, broad studies are needed. These studies should be designed to include examination of data in all subject areas within public higher education. Such examinations require the existence of systematic, continuous, and comparable management information systems which can provide for the full accounting of all costs, direct and indirect, identifiable with the appropriate subject area. The State Colleges and the University are now developing comprehensive information systems. The problem of assignment of indirect and capital outlay costs in terms of subject area has yet to be fully undertaken. The Junior Colleges of California today do not have a comprehensive information system and consequently are much less capable of providing needed data required to conduct intensive analyses to determine their highest cost programs.

The continuing lack of necessary information will impede the campuses and colleges, the systems of which they are a part, the Council, the Department of Finance, the Legislature and the Governor's office, in their quest to improve the capability of these institutions and agencies to allocate resources wisely.

The California and Western Conference cost study noted that,

> It is nearly always possible to alter the costs of education, but it is not possible to say categorically that an increase in cost will improve the quality of an environment or that a decrease in costs will weaken it. Cost realities considered, the challenge to faculties and administrations is to use their resources efficiently while continuing to seek ways of creating the best possible environments for advancing and disseminating knowledge.

The Study concluded that costs of instruction are affected by:

1. Size of classes.
2. Method of instruction (non-laboratory and laboratory classes, individual study and research).
3. Total volume of teaching activity.
4. Faculty teaching load.
5. Faculty salaries.
6. Expenditures for secretarial assistance, supplies and others.
7. Physical plan, including
    a. type of facility
    b. degree of utilization of that facility.
8. Administrative and general expenses.

These cost elements are the primary ones which must be examined to determine areas of high cost as suggested in HR 376. A system which is intended to provide needed data concerning cost categories is being developed under the auspices of the Western Interstate Commission on Higher Education. The project began in 1968 and is scheduled for completion in 1973. California public higher education segments are planning to participate in the project. It is hoped independent institutions may as well.

More complete response to the intent of HR 376 will be possible when results of this project become available.

Both the 1954 California and Western Conference Cost Study and the more recent Council sponsored Cost and Statistical Analysis suggest the importance of class size in explaining variations in unit costs. Small class sizes may result from instructional practices within an institution; in some instances, in public higher education in California they may result from providing too many programs for relatively small student demands. Section II, which cites examples from the Council initiated educational program survey, points to some subject areas where high costs or potential high costs may exist due to increasing numbers of programs and small enrollments. Thus, in part, the initial educational program survey may be considered an interim response to HR 376.

Educational Program Survey and Review of Academic Plans

In Section II of the report several program areas are discussed in terms of number of student credit hours produced, student majors, degrees awarded, and existing and planned programs among the campuses of the University of California and the California State Colleges. These program areas were selected following a staff review of data concerning all programs offered by the two segments and of their most recent academic plans.[1]

Section II and the specific summary below should be considered in light of the caveat stated at the outset:

> In considering the results of the educational program survey and the role of the Council in academic planning and program review, it should be kept in mind that the objective of any program and academic plan review by a coordinating body should be a positive constructive one designed to improve higher education in California. The coordinating agency must seek actively to develop a planning role rather than a role of policeman. Where questions are raised about present situations, it is not to criticize decisions and actions of the past but rather to identify matters in academic planning which will benefit from concerted attention through study either of an inter-segmental or intra-segmental nature. Such attention will serve the interest of higher education and the general public. It is in this spirit that this report should be read and considered.

Subject Area	Possible Future Study
Conservation of Natural Resources	*Major study of U.C. & C.S.C. programs. Council sponsorship.
Agriculture	*Major study of U.C., C.S.C. and J.C. programs. Council sponsorship.
Home Economics	C.S.C. examine graduate programs plans.
Dramatic Arts	U.C. and C.S.C. individually to examine needs and priority for new graduate programs in drama.
Law Enforcement and Corrections	*Major study of U.C., C.S.C. and J.C. programs. Council sponsorship.

*Studies which might be sponsored by the Council.

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[1] Areas not included in the reviews were: health sciences, engineering, environmental design including planning, and marine sciences.

Foreign Languages	*Major study of U.C. and C.S.C. graduate language programs and their development. Council sponsorship.
Graduate Anthropology	U.C. and C.S.C. individually to reassess needs for graduate anthropology programs.
Graduate Geology	C.S.C to review need for additional graduate programs.
Graduate Physics	U.C. and C.S.C. individually to consider need for additional graduate programs.
Area Studies	*U.C., C.S.C. and J.C. jointly to study development of area studies programs. Council sponsorship.
Graduate Programs in Administration	U.C. consider timing of establishment of graduate administration programs.
Radio and T.V.	C.S.C. study development of programs in the colleges and future needs including costs of providing facilities.
Art and Music	C.S.C. review implications of the MM and MFA degree proposals among several colleges.
Religious Studies	C.S.C. review the timing for new programs and their need.

A number of points were suggested by reading the academic plans for the State Colleges and the University. Several indicated the need for reviews and studies. These include:

	Possible Future Study
Legal Studies	*In view of the number of proposed law schools, the Council and the University may wish to develop a plan for legal education taking into account independent institutions' programs.

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*Studies which might be sponsored by the Council.

Develop. of U.C.-Riverside	The Council may wish to request a report from the University on the development of the Riverside campus with emphasis upon its status as a general campus.
Programs at U.C.-San Francisco Medical Center	Council may request a report concerning the relationship of the School of Biological Science and the Mathematical and Informational Science program to the campus limited functions.
Library science at U.C.-Santa Barbara and San Diego	The University could clarify plans in this subject area in subsequent revisions of the academic plan.
Technology and learning	All segments of higher education could profit from cooperative sharing of findings concerning design of facilities, use of computers, audio-visual materials, etc. This may be an area in which Council initiative could bring groups together for planning on regional bases.
State College studies in industrial technology, social work, and creative arts	Results of the studies should be of interest to the Council. It is suggested that segmental studies of this nature may be coordinated with those of the Council as well as other segments to avoid duplication of effort and perhaps to result in more comprehensive reviews.

The above study areas, of course, cannot be fruitfully pursued at one time. Consideration of a number of factors including the workloads of the respective segmental staffs, the resources of the Council, and priorities of need are involved in making final determination as to which subject areas should receive first attention, and by whom.

The educational program survey and review of academic plans raises questions about the roles of Council and Council staff in the academic planning process. Discussion of this subject is clearly warranted.

Council Review of Programs and Academic Plans

Academic planning is the hub to the wheel of facility and budget planning. All costs and quality factors center around the academic planning of the institutions and segments. While it is true that academic planning has generally been considered a function of the faculty at the campus level, rising enrollments and costs of universities and colleges call for academic program review at echelons above the campus level; and, in a tripartite system, call for program review at statewide coordinating levels. Insufficient or ineffective statewide planning and coordination of academic programs may lead not only to high unit teaching costs but also to establishment of new academic programs for which there is only marginal need, which in turn triggers the need for new facilities and additional support.

By no means should cost considerations be the sole factor considered in program reviews. The fact that it costs less to instruct freshmen students in English, history and mathematics than to provide instruction for seniors and graduate students in specialized fields does not mean that one task has priority over the other. At the same time, institutions need to experiment with a variety of instructional methods which may lead to wide variations in cost. It should be possible, however, through careful planning to concentrate some programs and facilities at strategic locations for the benefit of the student, the faculty and the state.

This report, the most comprehensive examination of programs and program plans yet conducted by the Council staff, necessarily raises a number of important questions concerning the state of academic planning as well as the role and responsibility of the Council itself.

The present effort is a pilot study with the intent to identify areas which may be susceptible to further study to improve the overall level of program planning. The question can be asked, "How often should this kind of review be repeated by the Council staff for use by the Council?"

The survey is a useful mechanism by which the Council can identify areas requiring study. The academic plans, though of high quality in themselves, do not provide enough information to isolate matters which may be examined productively. However, Council and staff review of these documents in themselves can be most informative--particularly when conducted along with other program reviews. Furthermore, the advisory functions assigned the Council call for the "development of plans for the orderly growth of public higher education and the making of recommendations on the need for and location of new facilities and programs." Educational program review together with examination of academic plans are essential to meeting fully this responsibility.

The educational program survey as well as review of academic plans may be continued, subject to improvements in the data used. Subsequent analyses could take into account segmental studies discussed in this report as well as results of any studies and investigations ultimately resulting from Council action on this document.

The current procedures under which new programs are to be referred to the Council may be open to examination. The University has complied fully with the procedures and has forwarded many programs to the Council and its staff. Some questions referred have been clearly of only peripheral relevance to the orderly development of higher education in California. On the other hand many University programs may be of great importance to orderly growth yet they fall outside the scope of the procedures and so are not referred to the Council.

In recent years few new State College programs have been referred to the Council. A review of their plans indicates a number of programs which in the future could be properly forwarded under the wording of the procedures. (Descriptions in academic plans, it is noted, are not in sufficient detail to permit Council review of a specific proposal in the context of consideration of the plan itself.)

The existing procedures of the Council appear to be in need of substantive modification.

Conclusion

This report provides the basis for the following conclusions:

1. Because the necessary data in the form required for meaningful cost analyses is not now produced by the segments, the Council cannot provide a final report in response to HR 376 for the 1971 Legislature.
2. In approximately 1973, the segments may have an operating information system which will provide the necessary data for the Council to respond to HR 376 and similar resolutions. The Junior Colleges, however, will need considerable assistance both financially and in terms of expertise to develop the necessary information system.
3. This present report and subsequent, periodic extensions of it possibly including the California Junior Colleges, can well serve as a preliminary report of Council findings and recommendations to the Legislature and the Governor in response to HR 376.
4. Current academic program review procedures adopted by the the Council exclude many programs from Council consideration which are important to planning for the orderly growth of higher education. The procedures should be reviewed by the Council staff at an early date.

5. The Director of the Council after examining the staff work-load and availability of consultant assistance and funds should establish a priority for further examination of the status of the areas of study listed on pp. 3 to 5. which involve both the State Colleges and the University. The examinations should include the role of the Junior Colleges and the impact on the private institutions of higher education in California as appropriate. The Director should report on the schedule of possible Council-sponsored studies at an early date.

6. The subject areas for individual segment study on pp. 3 to 5 should be examined by the respective segment. The priority of importance and results of such studies may be reported to the Council on a schedule which is mutually agreeable. Results may also be reflected in future academic plans.

7. Effective planning and coordination of academic programs cannot take place after the fact. In order for the Council to responsibily discharge its duties under the Donahoe Higher Education Act to develop plans for the orderly growth of higher education and the making of recommendations on the need for and location of new facilities and programs, the Council should be more intimately involved in early stages of academic program development. The Director and Council staff, in cooperation with representatives from the University, the State Colleges, and the Junior Colleges should formulate a plan for review of new programs which will provide for orderly growth and involvement of the Council as early as possible in the development stages.

APPENDIX A

House Resolution No. 376

Relative to higher education facilities

WHEREAS, The State of California is experiencing great difficulty in finding sources of funding for its various construction programs; and

WHEREAS, Some higher education facilities proposed for construction duplicate existing facilities at other locations; and

WHEREAS, Such proposed facilities, including, but not limited to performing and creative arts facilities and engineering facilities at state colleges and University of California campuses, represent high ratios of investment in relation to students actually using such facilities; and

WHEREAS, There are now in existence, or funded for construction, performing and creative arts facilities at 14, and engineering instructional facilities at 11, of the 18 functioning state college campuses; and

WHEREAS, There are now in existence, or funded for construction, performing and creative arts facilities at six, and engineering instructional facilities at five, of the eight functioning general campuses of the University of California; and

WHEREAS, The Coordinating Council for Higher Education has recently completed an extensive study in engineering education at the undergraduate as well as at the graduate levels in California, including in its study the University of California, the state colleges, junior colleges, and private institutions; and

WHEREAS, The Coordinating Council for Higher Education is charged under the Donahoe Higher Education Act with development of plans for the orderly growth of public higher education and the making of recommendations on the need for and location of new facilities and programs; now, therefore, be it

Resolved by the Assembly of the State of California, That the Members direct the Coordinating Council for Higher Education to transmit the report of its study of engineering education, including its findings and recommendations, to the Legislature and to the Governor at the earliest possible date; and be it further

Resolved, That the Coordinating Council for Higher Education, with the cooperation of the Regents of the University of California, the Trustees of the California State Colleges, and the Board of Governors of the California Community Colleges, is hereby directed to undertake a study of other such highly expensive, specialized, limited-use academic programs and facilities, with the exception of programs in medicine and dentistry, with the objective of concentrating such programs and facilities at strategic locations in these

House Resolution No. 376 (Cont.)

state educational systems and thereby effecting a reduction in total state expense therefor, and to provide a preliminary report of its findings and recommendations to the Legislature and to the Governor not later than the fifth legislative day of the 1970 Regular Session, and to submit a final report not later than the fifth legislative day of the 1971 Regular Session; and be it further

Resolved, That the Chief Clerk of the Assembly transmit a copy of this resolution to the Coordinating Council for Higher Education.

Resolution read, and referred by the Acting Speaker to the Committee on Rules.

SOURCE: Assembly Journal, California State Legislature, June 18, 1968, pp. 4601-4602.

APPENDIX B

Construction Cost Data Developed by the School Planning Division of the Los Angeles City School District

The following estimated construction cost data were provided to the Council's staff in 1967 by the School Planning Division of the Los Angeles City School District. These estimated costs were from the district's Master Plan Building Program prepared for the most recently planned Junior College.

The square footage allocations indicated in Table 1 were computed by the accepted space standards and are based upon the assignable square feet allocated for each instructional area. The assigned square feet are converted to gross square feet on the basis of an efficiency factor which is generally considered to be approximately 65% for classrooms and offices, 60% for laboratories, 70% for library, and 80% for support.

TABLE 1

Planning Data Showing Square Footage Allocations By Subject Area For a New Junior College In the Los Angeles City School District

						Areas Required			
Department	*Ph*	*Teach. Sta's*	*% Of Total*	*Student Sta's*	*% Of Total*	*Square Footage*	*% for Serv.*	*Total Sq. Ft.*	*% Of Total Sq. Ft.*
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*
Air & Space Technology	2	6	5.17	165	3.20	19,500	40	27,300	5.87
Art	4	4	3.45	120	2.33	7,720	40	10,808	2.33
Automotive Technology	1	10	8.61	282	5.46	38,250	40	53,550	11.52
Business	1	15	12.93	675	13.09	19,712	40	27,597	5.94
Chemistry	1	2	1.72	64	1.24	4,850	40	6,790	1.46
Cosmetology	2	4	3.45	96	1.86	5,600	40	7,840	1.69
Drama	4	3	2.59	80	1.55	13,830	40	19,362	4.17
Earth Science	1	3	2.59	127	2.46	4,800	40	6,720	1.45
Engineering & Electronics	2	8	6.90	270	5.24	13,250	40	18,550	3.99
English	1	8	6.90	360	6.98	7,374	40	10,324	2.22
Foreign Language	1	3	2.59	150	2.91	4,678	40	6,549	1.41
Home Economics	2	7	6.03	234	4.54	9,500	40	13,300	2.86
Journalism	1	2	1.72	75	1.45	2,798	40	3,917	.84
Life Science	1	4	3.45	216	4.19	8,815	40	12,341	2.66
Mathematics	2	3	2.59	135	2.62	3,184	40	4,458	.96
Music	4	3	2.59	190	3.68	9,180	40	12,852	2.77
Nursing	1	4	3.45	96	1.86	5,800	40	8,120	1.75
Physics	2	1	.86	32	.62	2,450	40	3,430	.74
Physical Ed.—Men	1	3	2.59	120	2.33	14,770	25	18,463	3.97
Physical Ed.—Men & Women	4	2	1.72	150	2.91	19,600	10	21,560	4.64
Physical Ed.—Women	2	3	2.59	135	2.62	11,367	25	14,209	3.05
Psychology & Philosophy	3	3	2.59	135	2.62	3,984	40	5,578	1.20
Social Sciences	3	9	7.75	480	9.30	9,874	40	13,824	2.97
Speech	4	2	1.72	90	1.75	2,480	40	3,472	.74
Sub-totals		112	96.55	4,477	86.81	243,366		330,914	71.20
Administration	3					19,400	40	27,160	5.84
Library & Learning Ctr.	1	4	3.45	680	13.19	42,100	25	52,625	11.32
Shipping & Receiving	3					2,650	10	2,915	.63
Boiler Building	1					5,400	10	6,000	1.29
Gardner's & Equip. Stor.	3					2,700	10	2,970	.64
Cafeteria	3					19,100	25	23,875	5.14
Student Center & Store	1					14,670	25	18,338	3.94
Sub-totals		4	3.45	680	13.19	100,620		127,883	28.80
TOTAL		116	100.00	5,157	100.00	349,386		464,797	

SOURCE: Financing California's Public Junior Colleges, CCHE, No. 1029, June 1967. Table "E".

In order to present a summary of the analysis of costs, Table 2 summarizes the estimated construction cost for each area based on the planned year of construction.

TABLE 2

Estimated Construction Costs For a New Junior College In the Los Angeles City School District

Department	*Ph*	*Constr. Year*	*1 Square Feet*	*1968 Cost Per Sq. Ft.*	*Estimated Constr. Cost*	*Dept. % of Total*	*Plus 8% Each Yr. After 1968*	*Final Cost Of Construction*
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*
Air & Space Tech	4	1979	27,300	$22.00	$600,600	4.9	$198,200	$798,800
Art	4	1979	10,808	23.00	248,600	2.0	82,000	330,600
Automotive Tech	1	1968	53,550	24.00	1,285,200	10.6		1,285,200
Business	1	1968	27,597	24.00	662,300	5.5		662,300
Chemistry	1	1968	6,790	26.50	179,900	1.5		179,900
Cosmetology	2	1971	7,840	22.00	172,500	1.4	15,500	188,000
Drama	4	1979	19,362	37.00	716,400	5.9	236,400	952,800
Earth Science	1	1968	6,720	23.00	154,600	1.3		154,600
Engineering & Electronics	2	1971	18,550	24.00	445,200	3.7	40,100	485,300
English	1	1968	10,324	23.00	237,500	1.9		237,500
Foreign Lang.	1	1968	6,549	25.00	163,700	1.3		163,700
Home Economics	2	1971	13,300	25.00	332,500	2.7	29,900	362,400
Journalism	1	1968	3,917	25.00	97,900	.8		97,900
Life Science	1	1968	12,341	26.50	327,000	2.7		327,000
Mathematics	2	1971	4,458	23.00	102,500	.8	9,200	111,700
Music	4	1979	12,852	29.00	372,700	3.1	123,000	495,700
Nursing	1	1968	8,120	24.00	194,900	1.6		194,900
Physics	2	1971	3,430	26.50	90,900	.7	8,200	99,100
Physical Ed.—Men	1	1968	18,463	28.00	517,000	4.3		517,000
Physical Ed.—Men & Women	4	1979	21,560	28.00	603,700	5.0	199,200	802,900
Physical Ed.—Women	2	1971	14,209	28.00	397,900	3.3	35,800	433,700
Psychology & Philosophy	3	1975	5,578	23.00	128,300	1.1	26,900	155,200
Social Sciences	3	1975	13,824	23.00	318,000	2.6	66,800	384,800
Speech	4	1979	3,472	25.00	86,800	.7	28,600	115,400
Administration	3	1975	27,160	25.00	679,000	5.6	142,600	821,600
Library & Learn. Ctr.	1	1968	52,625	30.00	1,578,800	13.0		1,578,800
Shipping & Receiving	3	1975	2,915	21.00	61,200	.5	12,900	74,100
Boiler Bldg.	1	1968	6,000	24.00	144,000	1.2		144,000
Gardeners' Bldg.	3	1975	2,970	21.00	62,400	.5	13,100	75,500
Cafeteria	3	1975	23,875	29.00	692,400	5.7	145,400	837,800
Student Ctr. & Store	1	1968	18,338	27.00	495,100	4.1		495,100
Totals			464,797		$12,149,500	100.0	$1,413,800	$13,563,300

SOURCE: Ibid., Table "F."

Finally, Table 3 presents a total cost analysis converted to 1968 dollars including fees, inspection, and estimated equipment cost for each category.

TABLE 3

Estimated Construction Costs
Including Fees, Inspection, and Initial Complement of Equipment
For a New Junior College in the Los Angeles City School District

Converted to 1968 Dollars

Department	*Ph*	*Construction Cost 1968**	*Fees, Arch. Inspection C.O.'s, Etc. (13%)*	*Estimated Equip. Cost % of Constr.*	*Estimated Equipment Cost*	*Total Cost (C + D + F)*	*Dept. % Cost of Total*
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*
Air & Space Tech	4	$600,600	$78,100	30.0	$180,200	$858,900	5.4
Art	4	248,600	32,300	20.0	49,700	330,600	2.1
Automotive Tech	1	1,285,200	167,100	25.0	321,300	1,773,600	11.1
Business	1	662,300	86,100	35.0	231,800	980,200	6.1
Chemistry	1	179,900	23,400	25.0	45,000	248,300	1.6
Cosmetology	2	172,500	22,400	20.0	34,500	229,400	1.4
Drama	4	716,400	93,100	6.0	43,000	852,500	5.4
Earth Science	1	154,600	20,100	24.0	37,100	211,800	1.3
Engineering & Electronics	2	445,200	57,900	24.0	106,800	609,900	3.8
English	1	237,500	30,900	8.0	19,000	287,400	1.8
Foreign Lang.	1	163,700	21,300	23.0	37,700	222,700	1.4
Home Economics	2	332,500	43,200	20.0	66,500	442,200	2.8
Journalism	1	97,900	12,700	11.0	10,800	121,400	.8
Life Science	1	327,000	42,500	26.0	85,000	454,500	2.9
Mathematics	2	102,500	13,300	11.0	11,300	127,100	.8
Music	4	372,700	48,500	20.0	74,500	495,700	3.1
Nursing	1	194,900	25,300	15.0	29,200	249,400	1.6
Physics	2	90,900	11,800	30.0	27,300	130,000	.8
Physical Ed.—Men	1	517,000	67,200	12.0	62,000	646,200	4.0
Physical Ed.—Men & Women	4	603,700	78,500	2.0	12,100	694,300	4.4
Physical Ed.—Women	2	397,900	51,700	12.0	47,700	497,300	3.1
Psychology & Philosophy	3	128,300	16,700	12.0	15,400	160,400	1.0
Social Sciences	3	318,000	41,300	9.0	28,600	387,900	2.4
Speech	4	86,800	11,300	13.0	11,300	109,400	.7
Administration	3	679,000	88,300	12.0	81,500	848,800	5.3
Library & Learn. Ctr.	1	1,578,800	205,200	20.0	315,800	2,099,800	13.2
Shipping & Receiving	3	61,200	8,000	10.0	6,100	75,300	.5
Boiler Bldg.	1	144,000	18,700	50.0	72,000	234,700	1.5
Gardeners' Bldg.	3	62,400	8,100	30.0	18,700	89,200	.6
Cafeteria	3	692,400	90,000	10.0	69,200	851,600	5.3
Student Ctr. & Store	1	495,100	64,400	10.0	49,500	609,000	3.8
Totals		$12,149,500	$1,579,400		$2,200,600	$15,929,500	100.0

SOURCE: Ibid., Table "G."

The cost figures presented in Table 3 are difficult to visualize. In order to gain a better understanding of their magnitudes the cost elements of construction (including fees, inspection, etc.) and estimated initial complement of equipment as well as total cost have been converted to amortized cost per student credit hour. The conversion assumes the facilities have a useful life of 40 years (a rather poor assumption in the case of the equipment component wherein it is necessary to replace certain equipment at shorter intervals of time), and that the facilities are utilized fully (in accordance with utilization standards). While it is recognized that modernization and reequipping of a facility is necessary throughout its lifetime, these elements of cost are purposely ignored. Some correction factor based on experience could be introduced into each of the cost figures, but the choice of an appropriate factor may only cloud the picture.

Table 4 sets forth the amortized initial cost per student credit hour for construction and equipment (and total) for the various subject area categories.

TABLE 4

Amortized Cost Per Student Credit Hour
For Construction and Equipment By Subject Area
For a New Junior College in the Los Angeles City School District
(Assumed Useful Life of 40 Years)

	Construction Costs	Equipment Costs	Total Costs	Construction Costs	Equipment Costs	Amortized Cost
	Student Station	Student Station	Student Station	Student Credit Hour	Student Credit Hour	Student Credit Hour
Air & Space	$ 4,113.33	$1,092.12	$5,205.50	$ 7.26	$ 1.93	$ 9.19
Art	2,340.83	414.17	2,755.00	4.13	.73	4.86
Auto Tech.	5,150.00	1,139.36	6,289.40	9.09	2.01	11.10
Business	1,108.74	343.41	1,452.15	1.96	.61	2.56
Chemistry	3,173.56	703.13	3,879.69	5.61	1.24	6.85
Cosmetology	2,030.21	359.38	2,389.58	3.58	.63	4.22
Drama	10,118.75	537.50	10,656.25	17.86	.95	18.80
Earth Science	1,375.59	292.13	1,667.72	2.43	.51	2.94
Engr. & Elec.	1,863.33	395.56	2,258.89	3.29	.70	3.99
English	745.56	52.78	798.33	1.31	.10	1.41
For. Language	1,233.33	251.33	1,484.67	2.18	.44	2.62
Home Econ.	1,605.56	284.19	1,889.74	2.83	.50	3.33
Journalism	1,474.67	144.00	1,618.67	2.60	.25	2.86
Life Science	1,710.65	393.52	2,104.17	3.02	.69	3.71
Mathematics	857.78	83.70	941.48	1.51	.15	1.66
Music	2,216.84	392.11	2,608.95	3.91	.69	4.60
Nursing	2,293.75	304.17	2,597.92	4.05	.54	4.58
Physics	3,209.38	853.13	4,062.50	5.66	1.50	7.17
PE - Men	4,868.33	516.66	5,385.00	8.59	.91	9.50
PE - M. & W.	4,548.90	80.67	4,628.67	8.03	.14	8.17
PE - Women	3,330.37	353.33	3,683.70	5.88	.62	6.50
Psych. & Philo.	1,074.07	114.07	1,188.15	1.90	.20	2.10
Social Science	748.54	59.58	808.13	1.32	.10	1.43
Speech	1,090.00	125.56	1,215.56	1.92	.22	2.14

APPENDIX C

Teaching Salary Costs of Organized Classes
1954-55 California and Western Conference Cost Study

TOTAL ONE-SEMESTER TEACHING-SALARY EXPENDITURES PER STUDENT-CREDIT-HOUR BY SUBJECT FIELDS AND LEVELS OF INSTRUCTION, 1954–1955[a]

1 Subject field	2 Low	3 Q_1	4 Median	5 Q_3	6 High
Lower Level[b]					
Biological Sciences	$ 3.48	$ 4.79	$ 5.46	$ 8.99	$26.78
Chemistry	4.56	5.99	7.10	9.06	38.75
Mathematics	4.22	4.67	5.65	8.00	12.07
Physics	3.53	6.09	6.66	9.36	12.50
All Engineering	10.01	11.52	12.09	12.81	15.45
Mechanical Engineering	10.35	10.72	14.75	15.89	20.36
Engineering Drawing	9.29	.....	14.29	.....	14.83
Economics	3.03	3.87	4.92	8.65	18.59
History	2.62	3.40	4.23	5.71	10.11
Political Science	1.41	4.34	4.43	7.83	9.21
Psychology	1.46	3.15	3.21	4.25	11.48
Sociology	1.58	3.08	4.13	6.61	16.10
Dramatic Arts	5.09	5.86	8.84	13.52	16.13
Art	4.61	5.87	7.84	9.87	33.53
English	5.87	6.81	7.73	8.85	10.04
French	5.03	6.47	7.62	9.21	12.66
Germanic Languages	6.22	7.85	8.40	9.66	17.22
Philosophy	3.19	4.40	5.18	8.65	18.57
Business	4.24	4.89	5.06	5.49	9.57
Education	4.56	7.49	7.67	11.61	14.45
Upper Level[b]					
Biological Sciences	$ 8.92	$11.68	$14.52	$29.15	$42.40
Chemistry	8.82	10.26	14.36	31.25	93.31
Mathematics	8.97	9.82	12.31	17.56	89.62
Physics	6.32	14.57	21.77	37.79	139.83
All Engineering	5.31	13.16	15.45	15.98	20.44
Mechanical Engineering	13.28	14.49	15.67	17.21	21.72
Engineering Drawing	11.39	.....	18.39	.....	24.33
Economics	4.52	6.85	8.35	9.88	55.38
History	4.83	7.67	10.25	16.48	20.40
Political Science	6.27	6.73	9.51	14.58	54.63
Psychology	5.67	7.16	7.89	15.07	19.85
Sociology	5.88	7.41	9.11	14.84	50.81
Dramatic Arts	8.94	12.64	16.28	23.57	31.76
Art	8.76	9.78	12.56	18.26	48.57
English	5.57	9.84	11.14	17.45	29.09
French	12.52	18.36	26.88	59.73	87.00
Germanic Languages	12.86	21.75	40.92	60.00	151.56
Philosophy	5.33	9.46	11.38	19.49	30.00
Business	4.64	5.91	6.21	6.70	7.55
Education	4.69	7.30	9.19	15.27	47.74

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[a] Quartiles and medians in this table are not interpolated but represent actual institutional figures. In most instances fourteen campuses were represented, in which instances Q_1 represents the fourth campus, median the seventh campus, and Q_3 the eleventh campus, when arranged from low to high.

[b] Does not include individual study or research.

SOURCE: California and Western Conference Cost and Statistical Study, 1954-55, p. 13.

Total One-Semester Teaching-Salary Expenditures
Per Student-Credit-Hour by Subject Fields and
Levels of Instruction, 1954-1955 (Continued)

1 Subject field	2 Low	3 Q_1	4 Median	5 Q_3	6 High
Graduate Level[b]					
Biological Sciences	$ 8.34	$27.15	$29.37	$12.59	$63.63
Chemistry	10.45	14.40	25.14	29.75	91.15
Mathematics	15.57	22.62	30.04	32.88	41.63
Physics	16.70	25.68	29.08	39.26	59.17
All Engineering	24.41	30.56	44.67	48.55	53.19
Mechanical Engineering	26.23	.....	44.36	.....	49.83
Economics	19.64	24.66	40.88	52.70	121.67
History	15.00	18.03	38.60	42.32	103.52
Political Science	22.73	47.36	50.17	54.68	96.29
Psychology	8.90	22.50	24.90	25.80	79.17
Sociology	11.31	25.54	31.61	55.49	98.68
Dramatic Arts	26.93	.....	33.80	.....	78.25
Art	11.04	.....	32.59	.....	83.67
English	20.16	23.37	28.82	39.08	83.50
French	9.32	27.38	38.30	49.76	101.64
Germanic Languages	7.42	18.75	26.67	78.41	157.03
Philosophy	12.14	22.72	33.98	65.01	75.36
Business	16.35	24.87	29.83	35.94	135.00
Education	8.63	14.53	17.52	20.49	27.16
Law	6.78	.....	10.88	.....	13.15

[b] Does not include individual study and research.

SOURCE: *California and Western Conference Cost and Statistical Study*, p. 14.

APPENDIX D

Coordinating Council
for Higher Education

Committee on
Educational Programs
March 18, 1968

COUNCIL ROLES IN DELINEATION OF FUNCTION AND PLANNING FOR ORDERLY GROWTH

Information Item

In 1967 the Council completed review of procedures in respect to one of its three primary functions--that of commenting upon the level of state support sought for higher education. This performance review, as well as comments of Council members, led to a re-orientation, at least on an interim basis of the Council's focus. This new role entails special studies of areas having impact on the overall level of financing--such as an investigation into the question of organized research--and continued encouragement of improvements of the budget-making process itself.

Two other major functional statements are made concerning the Council in the Donahoe Higher Education Act. They relate (1) to the Council's assurance that functional differentiation is maintained among the three public segments and (2) to planning for the orderly growth of higher education.

As required by statute the Council has reported to the Legislature on the need for changes in the differentiation of functions and in so doing has as of yet found no evidence for change; however, no major examination of the questions relating to functional delineation has been made since the Master Plan.

The Donahoe Act's statement in respect to the third function calls for "development of plans for the orderly growth" of public higher education. No "plans" for growth have been prepared by the Council though many of its special studies concerning specific subject areas may be considered as fulfilling in some respect the intent of the legislation. These studies have included examination of continuing education, library needs, programs in the health sciences and include the study of engineering education scheduled for the May meeting of the Council. Other recently authorized projects to which the staff will soon direct its attention likewise may be considered as related to the function. These studies concern the need for marine science programs and for programs in environmental design.

In sum, the implementation of the two functions relating to delineation of function and planning for orderly growth does not seem totally satisfactory--much as has been recognized in regard to the Council's role concerning comments to be made on the level of support sought for higher education. This is reflected to some degree in the Governor's Survey on Efficiency and Cost Control's task force comments concerning the Council:

> [The Council] . . . has failed to provide the direction and coordination which the Legislature sought. Its studies and recommendations are merely attacks upon single issues as they arise. There is no concerted, organized approach toward overall coordination to promote effective utilization of resources.

The task force report notes that there has been a duplication of facilities and waste of resources and calls to attention, for example, failures of adjacent institutions to share facilities. Proliferation of curriculum is noted, and the State Colleges' desires for university status seen as contrary to the Master Plan and the functional statements made in the Plan.

Elsewhere the Task Force states:

> The Coordinating Council is only a quiet scholarly voice apparently unheeded by the governing bodies of the institutions of higher learning.

An initial, tentative summary of results of a survey recently conducted by a member of the Council staff concerning the Council and its relationships with state government tends to amplify the impression received by the Task Force.[1] The survey, based on interviews with legislators, legislative and executive department staff, segmental staff as well as Council members and staff, disclosed the following broad characterizations of the Council:

> Responses to questions indicate that nearly all persons believe the California agency to be performing on occasion as a mediator of higher education conflicts, an expert advisor to the Legislature and Governor and as a spokesman for higher education. The agency is very seldom viewed as the leader of higher education in the state. The majority do not believe the Council performs a lobbyist role for higher education nor one as arbitrator of higher education conflicts if the Council's decisions are to be considered as binding de facto upon the parties.
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> In considering a set of functions which could be performed by the Council under certain circumstances, nearly all agree that the Council acts much as a research group. A majority consider the Council as at times engaged in an image-building function for higher education. Few individuals perceive the Council as acting in any way as an extension of the State Department of Finance in its budget-making and review function. Similarly few persons see the agency performing primarily administrative functions or in a capacity as investigator on behalf of the Legislature into higher education matters. Finally, a majority of

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[1] This was a personal survey performed for a doctoral dissertation.

> persons do not consider the Council as performing the function devoted to innovation for higher education.
>
> The assessment of the roles and functions performed by the California agency appear to be based upon a relatively clear perception of the record of the Council on the part of most individuals. Finally, this record and perceived performances lead most persons to rate the Council as of 'medium' effectiveness or in a number of instances to give a 'low' rating, both in respect to relationships with state government and with the higher education systems as well.
>
> The foregoing findings appear to suggest a composite image of the California agency. An image of a relatively passive group aspiring mostly to specialized expert roles and seldom toward activities which suggest leadership for higher education in the state. It is not clearly identified with state government on the one hand or higher education on the other. Its overall performances are generally viewed as being of moderate or limited effectiveness.

A national survey conducted along with the above suggests a composite picture of the "typical" coordinating board. Nationally this "typical" board appears to be somewhat more aggressive in performing leadership activities than the California Council. Tentative survey findings could be stated as follows:

> If the typical state higher education agency nationally were to be characterized it might be stated that the agency for the coordination for higher education generally pursues roles emphasizing its expertness in higher education matters. At the same time it is active on behalf of higher education in advocating or lobbying for higher education, seeks to act as leader of higher education and as a spokesman for its interests, and attempts to be a source of innovative ideas for higher education. It is not viewed as an arm of the Legislature or its state's budget office. It is generally thought to be fulfilling both advisory and administrative functions at once. It is likely in a better position to mediate disputes among higher education interests rather than to arbitrate them and hand down decisions.
>
> Whether of the coordinating board form or of the consolidated governing board form, the overall characterization is relatively similar. As a coordinating board,

> it may be thought to be more a part of state government or as a buffer between state government as such and higher education; while, as a governing board, the typical agency will likely be more identified with the institutions. The governing board necessarily tends to emphasize administrative and regulatory characteristics.

At the time the staff embarked on the review of performances concerning the implementation of the Council function in commenting on the level of support, it was stated by the Director that similar reviews would be conducted of the other two functions of the Council. Preliminary investigations led to the conclusion that attitudes toward proper Council roles concerning delineation of function and development of plans for orderly growth are unformed to a great degree. Further a "review of performance" is difficult in respect to the question of planning for orderly growth until there is developed an indication as to what should be considered appropriate to that function.

Recognizing the continued general need to closely examine the functions of the Council in these two important areas--and noting current discussion concerning Council comment to the Legislature in respect to the Governor's budget--the staff now plans to consider the general question relating to all Council functions within the context of the "Review of Selected Aspects of the Master Plan" now underway. In so doing some of the following questions may be considered as well as others which the Council may wish to include:

1. While the Council now receives on an annual basis the academic plans of the University of California and the California State Colleges, should ways and means be explored for the Council to take a more active role in the development of those plans and their review? Should the Council officially "approve" plans or elements of them and support their implementation? Should the Council prepare "plans" articulating the goals and objectives of the two four-year segments, as well as relating them to those of individual junior colleges perhaps on an area basis.

2. To date the Council has played a limited role in approving new University and State College programs--review is limited to a restricted list of proposals and has been of a general nature. Though the question has been raised on several occasions before, and was the subject of a review this last fall, should the matter be re-reviewed?

   Should more staff time and effort be devoted to intensive review of new programs? Should the kinds of proposals to be considered by the Council be expanded?

   (In this connection it is noted that 13 coordinating board agencies [of 22] across the country have authority for approval of most new programs.[1] This listing includes states such as Illinois, Minnesota, Ohio, Oklahoma, Texas, Virginia, and Wisconsin.)

3. Staff and consultants' studies have been prepared in the past concerning individual subject areas as medical education, continuing education and the like. Should such individual studies be continued and expanded (currently one such study is being completed and two begun)? In this connection should expanded use of consultants be made with possible corresponding reduction of Council staff or their reassignment of function? Should greater use of committee-prepared studies be made.

   (Other states have used devices such as use of a panel of experts retained on a permanent basis generally from other states to give advice on a range of subjects--need for new programs, value of segmental proposals, etc.[2] Special committees rather than single consultants may prepare studies. For example, North Carolina engaged a committee of out-of-state educators to review the need for university status for one of its state colleges. The committee made its report to the board, and the board staff made separate comment.)

4. The responsibility for budget review might be considered primary and given increased emphasis. Should the Council seek to divest itself of stated functions relating to the planning for the orderly growth of higher education and instead seek an expanded budget review and recommendation role? (Presumably delineation of function could be held to a policing function requiring major effort only on occasion. Periodic review and recommendation on the need for new centers and administration of federal programs could continue.) Support for this position may be found if it is accepted that the institutions and segments properly are the best, and only, non-legislative-executive judge of academic needs and changes which should be made to meet those needs. (Conversely the Council may emphasize the planning function and further deemphasize its consideration of budgets.)

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[1] The ten consolidated governing boards having coordination responsibilities have this responsibility as well.

[2] A similar approach is being used by the President of the University in respect to plans for schools of administration.

Coordinating Council
for Higher Education

APPENDIX E

Committee on
Educational Programs
May 20, 1968

Preliminary Plan for Annual Survey of Educational Offerings, California State Colleges and University of California

Background

During the discussion, at the March meeting, of the Council's statutory responsibilities in respect to delineation of function and development of plans for the orderly growth of higher education, it was suggested that the Council might undertake an "audit" of educational programs to better accomplish these tasks. The staff was then directed by the board to prepare a plan for such a review.

Examination of existing offerings of the State Colleges and the University in a comprehensive manner has not previously been attempted by the Council and its staff. To date a limited review of certain new programs of the two four-year segments has been conducted in terms of procedures and definitions adopted in 1964. Existing offerings have been considered within the context of a limited number of special studies concerning, respectively, medical, dental, nursing and continuing education. The consultant's study of engineering programs under discussion at the May meeting is the most recent example and is perhaps the most far-reaching in terms of recommendations concerning current curricula.

In addition to the limited review of new programs under the 1964 procedures and the special studies performed from time to time, the Council receives for comment the academic plans for the State Colleges and the University. Some opportunity is thus afforded to survey proposals for future developments in both segments and to make comment thereon. However, due to the size of the.plans, their scope, and the necessarily limited supporting material presented, comment may only be made when there are clearly potential duplications of plans. For example, in the most recent review it was noted that a number of programs were planned by both systems in marine studies and on aspects of urban problems. Special staff and consultant's studies were then authorized by the Council in these two areas. However, a comprehensive examination of existing offerings is required before more extensive comments are possible concerning the academic plans.

Why Conduct a Comprehensive Review?

Several factors indicate the desirability of conducting some review of the existing offerings of the two four-year segments--and perhaps ultimately of the community colleges.[1]

First, the Council is charged with development of plans for orderly growth. An initial element in any planning effort is to survey that which is currently available and the extent to which it is utilized. Annual comprehensive surveys will enable studies of specific subject matter areas to be more complete as well as identifying areas where such studies are needed.

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[1] Sufficient data is not now collected to permit such a review.

Secondly, the Council should be assured of the prudent use of public funds. Apparently unnecessary duplicatory offerings, unless explained by age of institution or other special circumstances, do not appear to be a prudent use of higher education resources and facilities.

Third, a more complete knowledge of the current pattern of offerings and their level of activity will enable a better review of academic plans and new programs than has heretofore been the case. The general level and sophistication of planning and continued review of on-going activities should be the result.

The Proposal

It is proposed to request the State Colleges and the University of California to provide data concerning their offerings on an annual basis. For the first year the information requested will consist of student credit hours (or contact hours), by subject field, by level of instruction, and by college. For the most part this data is now collected, though some effort at collation will be required.

The subject field breakdown will be that now used by each segment in development of gross totals for several statistical reports now prepared annually. For example, the State College subject field classification for the Physical Sciences reporting might look much as follows:

Code No.	For State College Y -- Student Credit Hours			
		Lower Div.	Upper Div.	Graduate
7712 27 03	Astronomy	500	225	100
7728 25 03	Chemistry	1,000	500	200
7756 27 03	Geology	400	100	-
7764 27 03	Meteorology	30	60	-
7030 23 03	Oceanography	-	-	-
7035 23 08	Photography	100	200	-
7836 27 03	Phys. Science	700	-	-
7844 26 03	Physics	500	225	200

From this kind of reporting, the subject fields of low activity would be noted and the circumstances investigated, such as whether a degree is offered (from catalogue and academic plans), the date of establishment of the degree program if there is a degree offered in the subject field and it is of low activity, and the extent to which the subject field is presented in other institutions and the level of activity in each instance. When necessary, the segment will be contacted for a statement of the special circumstances justifying a low activity case.

The data will be reviewed in conjunction with the academic master plans of the two systems and particular attention will be paid to proposed new degree programs and to the level of current activity of related subject field areas in other institutions.

The first year's effort will be a pilot study. There are a number of difficulties in attempting such a comprehensive view. For example, data is not collected and presented uniformly by system, and in some instances student contact or credit hour figures are not collected. Further, factors such as the service aspect of certain offerings must be taken into account.[1] Low activity is not in itself undesirable as students should not be precluded from majoring and receiving degrees in programs of an esoteric nature. However the question to be asked is the extent to which such limited demand offerings are presented among the several institutions in each system, and between the systems.

In future years as data systems develop more intensive and useful reviews may be attempted. For example, the relationship of faculty to offering is an important aspect which will not be treated in this initial effort due to limited available data.

The first year's review will include an assessment of the results, its value in the future and the ways in which it can be improved in both the short-term as well as in the longer term.

Data requests will be made immediately with reporting dates established after consultation with the segments concerned. The findings of the study will be reported in conjunction with the annual review of academic plans early in 1969.

Implications

The annual survey proposed herein may be used in such a manner to mark a substantial broadening of the Council's attention to the programs of the segments than has been the case previously. Such an examination of current offerings has not previously been conducted in a comprehensive manner. Future review of new programs can then be accomplished with the benefit of more complete background information.

The Council has determined that it does not intend to play a significant role in respect to review of annual levels of support sought by the segments of higher education in part due to the already intensive review by other agencies of state government. Increased attention to the academic program may be in order and could well constitute the primary focus of the Council's coordination activities. It may be noted that some state coordination agencies such as Texas have recently moved from a budget review emphasis to one of program review. Attention to curricula offerings has cost implications and the linkages of program and cost will become more clearly stated as higher education moves to program oriented budget presentations in the months and years to come.

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[1] English, for example, may show high activity as nearly all undergraduate students take some courses in the subject field. The fact that only a few degrees are granted in the subject may be considered an additional benefit from the services provided and not necessarily an unneeded program.

Existing Council procedures for review of new programs and the blanket approval of programs once they appear in an academic plan received and reviewed by the Council have not resulted in significant coordination activities on the part of the Council. In review of the Council's role presented last September[1] it was found that in a five-year period the Council had commented on eleven University instructional programs and six for the State Colleges. Some of these programs, previously reviewed favorably, are now being called into question in the engineering study before the Council.

It is hoped that new, meaningful procedures and definitions may be developed based in part on this educational offering review and its application to academic master plans. The staff will be directing its attention to this subject in the months ahead.

Action Proposed

It is suggested that the Council approve in principle the proposal for the survey as it may be modified in discussion. No further action is required.

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[1] "Council Review of Proposed New Academic Programs," September 25, 1967.

APPENDIX F

UNDERGRADUATE CURRICULUM TRENDS, 1957 to 1967

The following tables trace changes in undergraduate curricular requirements and the development of programs to "individualize" learning experiences at 322 liberal arts colleges and universities as shown by the percentage of institutions which had the requirements and programs in effect in 1957 and in 1967, compiled by Paul L. Dressel and Frances H. DeLisle in "Undergraduate Curriculum Trends," published by the American Council on Education.

Course Requirements	In 1957	In 1967
5 to 10 per cent of total credits in natural sciences	62.4%	70.5%
5 to 10 per cent of total credits in social sciences	54%	59%
11 to 20 per cent of total credits in humanities	43%	48%
1 year of English composition	59.9%	47.8%
1 year of literature	44.4%	36.6%
2 years of foreign language for degree of Bachelor of Arts	57.8%	67.1%
2 years of foreign language for degree of Bachelor of Science	39.1%	41.3%
2 years of physical education	68%	62.1%
Mathematics not specifically required	73%	64.6%

"Individualized" Programs	In 1957	In 1967
Advanced placement	36.3%	85.1%
Honors programs	32%	65.8%
Independent study	28%	58.4%
Seminars	24.8%	51.2%
Study abroad	11.2%	46.9%
Comprehensive examinations	33.2%	40.1%
Tutorials	7.8%	22.4%
Senior thesis or project	8.1%	14.9%
Field work experience	6.5%	13%
Residence hall programs	1.5%	10.6%
Interim terms	.6%	6.2%
Work-study or cooperative programs	3.4%	5.6%
Community service	2.2%	4%
Off-campus or nonresident terms	.6%	2.2%

(From The Chronicle of Higher Education)

APPENDIX G

PROCEDURES FOR PROGRAM AND ACADEMIC PLAN REVIEW

Note: The following Resolution was adopted by the CCHE on November 29, 1966. It supersedes the "Definitions and Procedures for Determining New Facilities and New Programs" adopted by the Council April 28 and clarified May 26, 1964.

Academic Planning and Council Procedures for Review of New Programs of the California State Colleges and the University of California

WHEREAS, The Master Plan for Higher Education provides that the Coordinating Council for Higher Education shall have among its responsibilities the "development of plans for the orderly growth of public higher education and the making of recommendations on the need for and location of new facilities and programs;" now, therefore, be it

RESOLVED, That the following definitions and procedures are hereby established for Council participation in academic planning for the public higher education segments of California:

1. Academic Plans. The academic plans of the public four year segments should continue to be reviewed by the Council annually in terms of the appropriateness to the delineation of function and orderly growth of public higher education. Any revision of these plans should be submitted to the Council for review and comment by October 1 of each year.

2. The Definition of "New Programs" and "New Facilities." The definition of "new programs" and "new facilities" will continue to be as follows:[1]

   A. A new program, within the functions of higher education allocated to the California State Colleges and the University of California by the Donahoe Higher Education Act, includes:

      (1) An additional campus of the University of California or an additional California State College (See Chapter 1, Section 22501 of the Donahoe Higher Education Act.) .

      (2) An additional General Extension Center as defined and for which establishment

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[1] The three major AEC contracts of the University of California are excepted from these definitions.

has been provided within recommendations of the Council adopted June 25, 1963, as follows:

Those locations where a full range of extension programs may be offered in accordance with recommendations on delineation of functions, be designated as "general extension centers" to distinguish them from other locations wherein several courses are offered.

The San Francisco State College Extension Downtown Center be designated a general extension center for purposes of offering a full range of extension programs; for University Extension, the Hillstreet Extension Center in Los Angeles and the San Francisco Center be likewise designated general extension centers.

Proposals to establish or upgrade any other locations to general extension centers be studied by the State Committee on Continuing Education and the results of those studies presented to the Coordinating Council for appropriate action.

(3) An additional center at which matriculated students may complete some or all residence and course requirements for a bachelor's or higher degree.

(4) An additional program which has an instructional, research or public service function, and which has no functional counterpart within the segment.

(5) An additional program which

  (a) Has an instructional or research function; and

  (b) Has a functional counterpart within the segment; and

  (cl) Is identified by the California State Colleges as an organized research activity or as an additional program which in the California State Colleges leads to a master's degree in a field not included in the list of broad foundation studies identified for all State Colleges by the Board of Trustees on March 8, 1963, or which leads to a baccalaureate or master's degree in the fields of Agriculture, Criminology, Engineering, Forestry Library Science, Nursing, and Social Welfare, or[1]

(c2) Is identified by the University of California as requiring any change in Chapter X, Sections 1-11 and Section 14 of the Standing Orders of the Regents of the University of California as these sections relate to the establishment of new schools or colleges other than a college of arts, letters and sciences or its equivalent on newly established campuses; or to the establishment of new degrees not offered by similar schools or colleges elsewhere in the University; or as resulting from any recommendations relating to the establishment of a research institute, bureau, or other organized research activity which arises pursuant to Chapter 3, Section 4, Paragraph C of the Standing Orders.

B. A new facility is any capital outlay for land or building which arises from the need to house a new program as defined under clauses A(1), A(2), A(3), A(4), A(5), above.

3. Additional Centers. Studies pertaining to the location and the timing of establishment of additional centers will be conducted by the Council at approximately 5 year intervals or at the direction of the Legislature.

4. New Programs Described in Academic Plans. Proposed new programs (other than additional centers) specifically described in the academic plans, but which either (1) have no date of implementation stated in the plan or (2) have had the date of implementation stated in the plan changed, should be submitted to the Council for possible review as in recommendation 1. above. Such submittals should occur by April 15 if budgetary support is required and by October 1 if no added costs which can be identified in the budget are required.

5. New Programs Not Described in Academic Plans. All other new programs as defined in recommendation (2) above and which do not appear in the academic plans, and which may or may not have been approved by the governing boards should be submitted to the Council for possible review as in recommendation 1. above, by April 15 each year during which the budget supporting the program either in whole or in part is being prepared.

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[1] Paragraph 5(c1) above should be interpreted to include only those programs leading to a bachelor's degree in Architecture or to a baccalaureate or master's degree in the fields of: Agriculture, Criminology, Engineering, Forestry, Library Science, Nursing and Social Welfare which are proposed for a State College which has no existing programs in these respective fields.

It can be expected that new programs may arise occasionally on an "opportunity" basis, where a specific grant is offered, which had not been anticipated in the academic plan but which would enhance the total program. This recommendation assures that such a proposed new program would not be jeopardized because it was not in the academic plan but it would still come under Council review, if necessary.

6. Funding for working drawings or construction of capital outlay projects should not precede the submittal of the academic plans or the proposal for a new program to the Council.

7. The Coordinating Council will continue to study planning problems in higher education of the state including those which may pertain to the Junior Colleges, and will advise the segments in anticipation of further needs in special areas. Such advice may also be concerned with the discontinuance of existing programs.

November 29, 1966